

SEQUENCE LISTING

<110> Lyons, Katelynn J.
Ashley, Birkett J.
Haron, Jay A.

<120> STABILIZED IMMUNOGENIC HBc CHIMER PARTICLES

<130> ICC-136.0 (4564-88881)

<150> US 60/432,123

<151> 2002-12-10

<150> US 10/274,616

<151> 2002-10-21

<150> US 10/080,299

<151> 2002-02-21

<150> US 10/082,014

<151> 2002-02-22

<160> 455

<170> PatentIn version 3.2

<210> 1

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<212> PRT

<213> Hepatitis B virus

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20 25 30

Thr Ala Ser Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys
35 40 45

Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu
50 55 60

Leu Met Thr Leu Ala Thr Trp Val Gly Val Asn Leu Glu Asp Pro Ala
65 70 75 80

Ser Arg Asp Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys
85 90 95

Phe Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg
100 105 110

Glu Thr Val Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr
115 120 125

SEQUENCE LISTING

<110> Lyons, Katelynne J.
Ashley, Birkett J.
Haron, Jay A.

<120> STABILIZED IMMUNOGENIC HBc CHIMER PARTICLES

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20 25 30

Thr Ala Ser Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys
35 40 45

Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu
50 55 60

Leu Met Thr Leu Ala Thr Trp Val Gly Val Asn Leu Glu Asp Pro Ala
65 70 75 80

Ser Arg Asp Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys
85 90 95

Phe Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg
100 105 110

Glu Thr Val Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr
115 120 125

Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro
 130 135 140

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Gln Ser Arg Glu Ser Gln Cys
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 35 40 45

Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu
 50 55 60

Leu Met Thr Leu Ala Thr Trp Val Gly Asn Asn Leu Gln Asp Pro Ala
 65 70 75 80

Ser Arg Asp Leu Val Val Asn Tyr Val Asn Thr Asn Met Gly Leu Lys
 85 90 95

Ile Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg
 100 105 110

Glu Thr Val Leu Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr
 115 120 125

Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro
 130 135 140

Glu Thr Thr Val Val Arg Arg Arg Asp Arg Gly Arg Ser Pro Arg Arg
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Arg Ser Gln Ser Arg Glu Ser Gln Cys
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35 40 45

Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu
50 55 60

Leu Met Thr Leu Ala Thr Trp Val Gly Asn Asn Leu Glu Asp Pro Ala
65 70 75 80

Ser Arg Asp Leu Val Val Asn Tyr Val Asn Thr Asn Val Gly Leu Lys
85 90 95

Ile Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg
100 105 110

Glu Thr Val Leu Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr
115 120 125

Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro
130 135 140

Glu Thr Thr Val Val Arg Arg Arg Asp Arg Gly Arg Ser Pro Arg Arg
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Thr Ala Ala Ala Leu Tyr Arg Asp Ala Leu Glu Ser Pro Glu His Cys
35 40 45

Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Asp
50 55 60

Leu Met Thr Leu Ala Thr Trp Val Gly Thr Asn Leu Glu Asp Pro Ala
65 70 75 80

Ser Arg Asp Leu Val Val Ser Tyr Val Asn Thr Asn Val Gly Leu Lys
85 90 95

Phe Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg
100 105 110

Glu Thr Val Leu Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr
115 120 125

Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro
130 135 140

Glu Thr Thr Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr
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Pro Ser Pro Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser
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Gln Ser Arg Glu Ser Gln Cys
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<213> woodchuck

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Asn Phe Leu Pro Leu Asp Phe Phe Pro Asp Leu Asn Ala Leu Val Asp
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Thr Ala Thr Ala Leu Tyr Glu Glu Glu Leu Thr Gly Arg Glu His Cys
35 40 45

Ser Pro His His Thr Ala Ile Arg Gln Ala Leu Val Cys Trp Asp Glu
 50 55 60

Leu Thr Lys Leu Ile Ala Trp Met Ser Ser Asn Ile Thr Ser Glu Gln
 65 70 75 80

Val Arg Thr Ile Ile Val Asn His Val Asn Asp Thr Trp Gly Leu Lys
 85 90 95

Val Arg Gln Ser Leu Trp Phe His Leu Ser Cys Leu Thr Phe Gly Gln
 100 105 110

His Thr Val Gln Glu Phe Leu Val Ser Phe Gly Val Trp Ile Arg Thr
 115 120 125

Pro Ala Pro Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro
 130 135 140

Glu His Thr Val Ile Arg Arg Arg Gly Gly Ala Arg Ala Ser Arg Ser
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Arg Arg Arg Arg Ser Gln Cys
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 <213> ground squirrel
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Thr Val Gln Ala Ser Lys Leu Cys Leu Gly Trp Leu Trp Asp Met Asp
 20 25 30

Ile Asp Pro Tyr Lys Glu Phe Gly Ser Ser Tyr Gln Leu Leu Asn Phe
 35 40 45

Leu Pro Leu Asp Phe Phe Pro Asp Leu Asn Ala Leu Val Asp Thr Ala
 50 55 60

Ala Ala Leu Tyr Glu Glu Glu Leu Thr Gly Arg Glu His Cys Ser Pro
 65 70 75 80

His His Thr Ala Ile Arg Gln Ala Leu Val Cys Trp Glu Glu Leu Thr

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Pro Glu Leu

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<211> 21

<212> PRT

<213> Artificial sequence

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<223> Chimera of malarial T cell epitope and hepatitis B

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<210> 11

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<211> 35

<212> PRT

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Gln Gln Ala
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Pro Ala Ala Gln Gln Asp Lys Pro Ala Asp Ala
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<210> 14
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Arg Lys Arg Ile His Ile Gly Pro Gly Arg Ala Phe Tyr Ile Thr Lys
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Asn

<210> 15
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<212> PRT
<213> Foot-and-mouth disease virus

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Gly Asp Leu Gln Val Leu Ala Gln Lys Val Ala Arg Thr Leu Pro
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<210> 16
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<212> PRT
<213> Influenza A virus

<400> 16

Tyr Arg Asn Leu Leu Trp Leu Thr Glu Lys
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<210> 17
<211> 23
<212> PRT
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Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly Cys
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Arg Cys Asn Gly Ser Ser Asp
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Glu Gln Gln Ser Ala Val Asp Ala Asp Asp Ser His Phe Val Ser Ile
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Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly Ser
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<210> 22

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Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly Cys
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Arg Ala Asn Asp Ser Ser Asp
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Cys Arg Cys Asn Asp Ser Ser Asp
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Trp Gly Ile
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Met Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly
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Met Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly
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<212> PRT
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 <400> 31

 Met Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly
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 Ala Arg Cys Asn Asp Ser Ser Asp
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 <400> 32

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 Cys Arg Ser Asn Asp Ser Ser Asp
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 <400> 33

 Met Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly
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 <210> 34
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 Ile Arg Asn Glu Trp Gly Ser Arg Ser Asn Asp Ser Ser Asp
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20 25 30

Ile Arg Asn Glu Trp Gly Ser Arg Ser Asn Asp Ser Ser Asp Ser Leu
35 40 45

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Asn Asp Ser Ser Asp
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35 40 45

<210> 37

<211> 69

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20 25 30

Ile Arg Asn Glu Trp Gly Ala Arg Ala Asn Asp Ser Ser Asp Ser Leu
35 40 45

Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly Ala Arg Ala
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Asn Asp Ser Ser Asp

65

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Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly Ser Arg Cys Asn Asp
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Ser Ser Asp

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<400> 39

Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly Ser Arg Cys Asn Asp
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Ser Ser Asp Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly Ser Arg
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Cys Asn Asp Ser Ser Asp
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Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly Ser Arg Cys Asn Asp
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Cys Asn Asp Ser Ser Asp Glu Val Glu Thr Pro Ile Arg Asn Glu Trp
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Gly Ser Arg Cys Asn Asp Ser Ser Asp
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Pro Ile Arg Asn Glu Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
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Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Thr
 20 25 30

Pro Ile Arg Asn Glu Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 35 40 45

Xaa Xaa Xaa Xaa Xaa Xaa Thr Pro Ile Arg Asn Glu Xaa Xaa Xaa Xaa
 50 55 60

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Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Thr
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Xaa Xaa Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
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20 25 30

Xaa Xaa Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
35 40 45

Xaa Xaa Xaa Xaa Xaa Xaa Thr Xaa Xaa Arg Xaa Xaa Xaa Xaa Xaa Xaa
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Xaa Xaa Xaa Xaa Xaa Xaa
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<212> PRT

<213> Influenza B virus

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Arg

<210> 48

<211> 142

<212> PRT

<213> Yersinia pestis

<400> 48

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Arg Ser Lys Leu Arg Glu Glu Leu Ala Glu Leu Thr Ala Glu Leu Lys
 20 25 30

Ile Tyr Ser Val Ile Gln Ala Glu Ile Asn Lys His Leu Ser Ser Ser
 35 40 45

Gly Thr Ile Asn Ile His Asp Lys Ser Ile Asn Leu Met Asp Lys Asn
 50 55 60

Leu Tyr Gly Tyr Thr Asp Glu Glu Ile Phe Lys Ala Ser Ala Glu Tyr
 65 70 75 80

Lys Ile Leu Glu Lys Met Pro Gln Thr Thr Ile Gln Val Asp Gly Ser
 85 90 95

Glu Lys Lys Ile Val Ser Ile Lys Asp Phe Leu Gly Ser Glu Asn Lys
 100 105 110

Arg Thr Gly Ala Leu Gly Asn Leu Lys Asn Ser Tyr Ser Tyr Asn Lys
 115 120 125

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 130 135 140

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Gly Gly Tyr

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 1 5 10

<210> 51
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1 5 10 15

<210> 52

<211> 28

<212> PRT

<213> Moraxella catarrhalis

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Ala Glu Leu Asp Asp Lys Tyr Ala Gly Lys Gly Tyr
20 25

<210> 53

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<213> Moraxella catarrhalis

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20 25

<210> 54

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<213> Moraxella catarrhalis

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<212> PRT

<213> Porphyromonas gingivalis

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1 5 10 15

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20 25

<210> 56
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1 5 10 15

Thr Lys Tyr Val
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<211> 21
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<400> 57

Lys Ala Ala Ile Ala Pro Ala Lys Ala Ala Ala Ala Pro Ala Lys Ala
1 5 10 15

Ala Thr Ala Pro Ala
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<210> 58
<211> 24
<212> PRT
<213> Plasmodium falciparum

<400> 58

Asn Ala Asn Pro Asn Val Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro
1 5 10 15

Asn Ala Asn Pro Asn Val Asp Pro
20

<210> 59
<211> 20
<212> PRT
<213> Plasmodium falciparum

<400> 59

Asn Ala Asn Pro Asn Val Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro
1 5 10 15

Asn Ala Asn Pro
20

<210> 60
<211> 20
<212> PRT
<213> Plasmodium falciparum

<400> 60

Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Val Asp Pro
1 5 10 15

Asn Ala Asn Pro
20

<210> 61

<211> 28

<212> PRT

<213> Plasmodium falciparum

<400> 61

Asn Ala Asn Pro Asn Val Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro
1 5 10 15

Asn Ala Asn Pro Asn Val Asp Pro Asn Ala Asn Pro
20 25

<210> 62

<211> 20

<212> PRT

<213> Plasmodium falciparum

<400> 62

Asn Pro Asn Val Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala
1 5 10 15

Asn Pro Asn Val
20

<210> 63

<211> 22

<212> PRT

<213> Plasmodium falciparum

<400> 63

Asn Pro Asn Val Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala
1 5 10 15

Asn Pro Asn Val Asp Pro
20

<210> 64

<211> 24

<212> PRT

<213> Plasmodium falciparum

<400> 64

Asn Pro Asn Val Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala
1 5 10 15

Asn Pro Asn Val Asp Pro Asn Ala
20

<210> 65
<211> 18
<212> PRT
<213> Plasmodium falciparum

<400> 65

Asn Val Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro
1 5 10 15

Asn Val

<210> 66
<211> 20
<212> PRT
<213> Plasmodium falciparum

<400> 66

Asn Val Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro
1 5 10 15

Asn Val Asp Pro
20

<210> 67
<211> 22
<212> PRT
<213> Plasmodium falciparum

<400> 67

Asn Val Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro
1 5 10 15

Asn Val Asp Pro Asn Ala
20

<210> 68
<211> 16
<212> PRT
<213> Plasmodium falciparum

<400> 68

Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Val
1 5 10 15

<210> 69
<211> 18
<212> PRT
<213> Plasmodium falciparum

<400> 69

Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Val
 1 5 10 15

Asp Pro

<210> 70
 <211> 20
 <212> PRT
 <213> Plasmodium falciparum

<400> 70

Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Val
 1 5 10 15

Asp Pro Asn Ala
 20

<210> 71
 <211> 19
 <212> PRT
 <213> Plasmodium vivax

<400> 71

Gly Asp Arg Ala Asp Gly Gln Pro Ala Gly Asp Arg Ala Asp Gly Gln
 1 5 10 15

Pro Ala Gly

<210> 72
 <211> 18
 <212> PRT
 <213> Plasmodium vivax

<400> 72

Arg Ala Asp Asp Arg Ala Ala Gly Gln Pro Ala Gly Asp Gly Gln Pro
 1 5 10 15

Ala Gly

<210> 73
 <211> 18
 <212> PRT
 <213> Plasmodium vivax

<400> 73

Ala Asn Gly Ala Gly Asn Gln Pro Gly Ala Asn Gly Ala Gly Asp Gln
 1 5 10 15

Pro Gly

<210> 74
 <211> 18
 <212> PRT
 <213> Plasmodium vivax

<400> 74

Ala Asn Gly Ala Asp Asn Gln Pro Gly Ala Asn Gly Ala Asp Asp Gln
 1 5 10 15

Pro Gly

<210> 75
 <211> 18
 <212> PRT
 <213> Plasmodium vivax

<400> 75

Ala Asn Gly Ala Gly Asn Gln Pro Gly Ala Asn Gly Ala Asp Asn Gln
 1 5 10 15

Pro Gly

<210> 76
 <211> 18
 <212> PRT
 <213> Plasmodium vivax

<400> 76

Ala Asn Gly Ala Gly Asn Gln Pro Gly Ala Asn Gly Ala Asp Asp Gln
 1 5 10 15

Pro Gly

<210> 77
 <211> 22
 <212> PRT
 <213> Plasmodium vivax

<400> 77

Ala Pro Gly Ala Asn Gln Glu Gly Gly Ala Ala Ala Pro Gly Ala Asn
 1 5 10 15

Gln Glu Gly Gly Ala Ala
 20

<210> 78
 <211> 36
 <212> PRT

<213> Plasmodium vivax

<400> 78

Ala Asn Gly Ala Gly Asn Gln Pro Gly Ala Asn Gly Ala Gly Asp Gln
1 5 10 15

Pro Gly Ala Asn Gly Ala Asp Asn Gln Pro Gly Ala Asn Gly Ala Asp
20 25 30

Asp Gln Pro Gly
35

<210> 79

<211> 16

<212> PRT

<213> Plasmodium berghei

<400> 79

Asp Pro Pro Pro Pro Asn Pro Asn Asp Pro Pro Pro Pro Asn Pro Asn
1 5 10 15

<210> 80

<211> 24

<212> PRT

<213> Plasmodium yoelii

<400> 80

Gln Gly Pro Gly Ala Pro Gln Gly Pro Gly Ala Pro Gln Gly Pro Gly
1 5 10 15

Ala Pro Gln Gly Pro Gly Ala Pro
20

<210> 81

<211> 15

<212> PRT

<213> Streptococcus sobrinus

<400> 81

Lys Pro Arg Pro Ile Tyr Glu Ala Lys Leu Ala Gln Asn Gln Lys
1 5 10 15

<210> 82

<211> 16

<212> PRT

<213> Streptococcus sobrinus

<400> 82

Ala Lys Ala Asp Tyr Glu Ala Lys Leu Ala Gln Tyr Glu Lys Asp Leu
1 5 10 15

<210> 83

<211> 9

<212> PRT
<213> *Shigella flexneri*

<400> 83

Lys Asp Arg Thr Leu Ile Glu Gln Lys
1 5

<210> 84
<211> 15
<212> PRT
<213> respiratory syncytial virus

<400> 84

Cys Ser Ile Cys Ser Asn Asn Pro Thr Cys Trp Ala Ile Cys Lys
1 5 10 15

<210> 85
<211> 25
<212> PRT
<213> *Entamoeba histolytica*

<400> 85

Val Glu Cys Ala Ser Thr Val Cys Gln Asn Asp Asn Ser Cys Pro Ile
1 5 10 15

Ile Ala Asp Val Glu Lys Cys Asn Gln
20 25

<210> 86
<211> 34
<212> PRT
<213> *Schistosoma japonicum*

<400> 86

Asp Leu Gln Ser Glu Ile Ser Leu Ser Leu Glu Asn Gly Glu Leu Ile
1 5 10 15

Arg Arg Ala Lys Ser Ala Glu Ser Leu Ala Ser Glu Leu Gln Arg Arg
20 25 30

Val Asp

<210> 87
<211> 34
<212> PRT
<213> *Schistosoma mansoni*

<400> 87

Asp Leu Gln Ser Glu Ile Ser Leu Ser Leu Glu Asn Ser Glu Leu Ile
1 5 10 15

Arg Arg Ala Lys Ala Ala Glu Ser Leu Ala Ser Asp Leu Gln Arg Arg

20

25

30

Val Asp

<210> 88
 <211> 26
 <212> PRT
 <213> Bovine Inhibin
 <400> 88

Ser Thr Pro Pro Leu Pro Trp Pro Trp Ser Pro Ala Ala Leu Arg Leu
 1 5 10 15

Leu Gln Arg Pro Pro Glu Glu Pro Ala Ala
 20 25

<210> 89
 <211> 17
 <212> PRT
 <213> Ebola virus
 <400> 89

Ala Thr Gln Val Glu Gln His His Arg Arg Thr Asp Asn Asp Ser Thr
 1 5 10 15

Ala

<210> 90
 <211> 17
 <212> PRT
 <213> Ebola virus
 <400> 90

His Asn Thr Pro Val Tyr Lys Leu Asp Ile Ser Glu Ala Thr Gln Val
 1 5 10 15

Glu

<210> 91
 <211> 17
 <212> PRT
 <213> Ebola virus
 <400> 91

Gly Lys Leu Gly Leu Ile Thr Asn Thr Ile Ala Gly Val Ala Val Leu
 1 5 10 15

Ile

<210> 92
 <211> 14
 <212> PRT
 <213> Escherichia coli

<400> 92

Cys Cys Glu Leu Cys Cys Tyr Pro Ala Cys Ala Gly Cys Asn
 1 5 10

<210> 93
 <211> 18
 <212> PRT
 <213> Escherichia coli

<400> 93

Asn Thr Phe Tyr Cys Cys Glu Leu Cys Cys Tyr Pro Ala Cys Ala Gly
 1 5 10 15

Cys Asn

<210> 94
 <211> 18
 <212> PRT
 <213> Escherichia coli

<400> 94

Ser Ser Asn Tyr Cys Cys Glu Leu Cys Cys Tyr Pro Ala Cys Ala Gly
 1 5 10 15

Cys Asn

<210> 95
 <211> 42
 <212> PRT
 <213> Alzheimer's disease b-Amyloid

<400> 95

Asp Ala Glu Phe Arg His Asp Ser Gly Tyr Glu Val His His Gln Lys
 1 5 10 15

Leu Val Phe Phe Ala Glu Asp Val Gly Ser Asn Lys Gly Ala Ile Ile
 20 25 30

Gly Leu Met Val Gly Gly Val Val Ile Ala
 35 40

<210> 96
 <211> 17
 <212> PRT
 <213> Alzheimer's disease b-Amyloid

<400> 96

Asp Ala Glu Phe Arg His Asp Ser Gly Tyr Glu Val His His Gln Lys
1 5 10 15

Leu

<210> 97

<211> 11

<212> PRT

<213> Alzheimer's disease b-Amyloid

<400> 97

Glu Asp Val Gly Ser Asn Lys Gly Ala Ile Ile
1 5 10

<210> 98

<211> 33

<212> PRT

<213> Alzheimer's disease b-Amyloid

<400> 98

Asp Ala Glu Phe Arg His Asp Ser Gly Tyr Glu Val His His Gln Lys
1 5 10 15

Leu Val Phe Phe Ala Glu Asp Val Gly Ser Asn Lys Gly Ala Ile Ile
20 25 30

Gly

<210> 99

<211> 32

<212> PRT

<213> alzheimer's disease b-ampliyoid

<400> 99

Asp Ala Glu Phe Arg His Asp Ser Gly Tyr Glu Val His His Gln Lys
1 5 10 15

Leu Val Phe Phe Ala Glu Asp Val Gly Ser Asn Lys Gly Ala Ile Ile
20 25 30

<210> 100

<211> 13

<212> PRT

<213> Neisseria meningitidis

<400> 100

Tyr Val Ala Val Glu Asn Gly Val Ala Lys Lys Val Ala
1 5 10

<210> 101
 <211> 15
 <212> PRT
 <213> Neisseria meningitidis

<400> 101

His	Phe	Val	Gln	Gln	Thr	Pro	Lys	Ser	Gln	Pro	Thr	Leu	Val	Pro
1				5					10					15

<210> 102
 <211> 13
 <212> PRT
 <213> Neisseria meningitidis

<400> 102

His	Val	Val	Val	Asn	Asn	Lys	Val	Ala	Thr	His	Val	Pro
1				5					10			

<210> 103
 <211> 12
 <212> PRT
 <213> Neisseria meningitidis

<400> 103

Pro	Leu	Gln	Asn	Ile	Gln	Pro	Gln	Val	Thr	Lys	Arg
1			5						10		

<210> 104
 <211> 21
 <212> PRT
 <213> Neisseria meningitidis

<400> 104

Ala	Gln	Ala	Ala	Asn	Gly	Gly	Ala	Ala	Ser	Gly	Gln	Val	Lys	Val	Thr
1				5					10					15	

Lys	Val	Thr	Lys	Ala
			20	

<210> 105
 <211> 10
 <212> PRT
 <213> Neisseria meningitidis

<400> 105

Tyr	Val	Asp	Glu	Gln	Ser	Lys	Tyr	His	Ala
1				5				10	

<210> 106
 <211> 15
 <212> PRT
 <213> Neisseria meningitidis

<400> 106

His Phe Val Gln Asn Lys Gln Asn Gln Pro Pro Thr Leu Val Pro
 1 5 10 15

<210> 107
 <211> 18
 <212> PRT
 <213> Neisseria meningitidis

<400> 107

Lys Pro Ser Ser Thr Asn Ala Lys Thr Gly Asn Lys Val Glu Val Thr
 1 5 10 15

Lys Ala

<210> 108
 <211> 17
 <212> PRT
 <213> Neisseria meningitidis

<400> 108

Tyr Trp Thr Thr Val Asn Thr Gly Ser Ala Thr Thr Thr Thr Phe Val
 1 5 10 15

Pro

<210> 109
 <211> 11
 <212> PRT
 <213> Neisseria meningitidis

<400> 109

Tyr Val Asp Glu Lys Lys Lys Met Val His Ala
 1 5 10

<210> 110
 <211> 13
 <212> PRT
 <213> Neisseria meningitidis

<400> 110

His Tyr Thr Arg Gln Asn Asn Ala Asp Val Phe Val Pro
 1 5 10

<210> 111
 <211> 14
 <212> PRT
 <213> Neisseria meningitidis

<400> 111

Tyr Tyr Thr Lys Asp Thr Asn Asn Asn Leu Thr Leu Val Pro
 1 5 10

<210> 112
 <211> 14
 <212> PRT
 <213> Neisseria meningitidis

<400> 112

Pro Pro Gln Lys Asn Gln Ser Gln Pro Val Val Thr Lys Ala
 1 5 10

<210> 113
 <211> 14
 <212> PRT
 <213> Neisseria meningitidis

<400> 113

Pro Pro Ser Lys Gly Gln Thr Gly Asn Lys Val Thr Lys Gly
 1 5 10

<210> 114
 <211> 14
 <212> PRT
 <213> Neisseria meningitidis

<400> 114

Pro Pro Ser Lys Ser Gln Pro Gln Val Lys Val Thr Lys Ala
 1 5 10

<210> 115
 <211> 18
 <212> PRT
 <213> Neisseria meningitidis

<400> 115

Gln Pro Gln Thr Ala Asn Thr Gln Gln Gly Gly Lys Val Lys Val Thr
 1 5 10 15

Lys Ala

<210> 116
 <211> 18
 <212> PRT
 <213> Neisseria meningitidis

<400> 116

Gln Pro Gln Val Thr Asn Gly Val Gln Gly Asn Gln Val Lys Val Thr
 1 5 10 15

Lys Ala

<210> 117
 <211> 18

<212> PRT
<213> Neisseria meningitidis

<400> 117

Gln Pro Ser Lys Ala Gln Gly Gln Thr Asn Asn Gln Val Lys Val Thr
1 5 10 15

Lys Ala

<210> 118
<211> 20
<212> PRT
<213> Neisseria meningitidis

<400> 118

Pro Pro Ser Ser Asn Gln Gly Lys Asn Gln Ala Gln Thr Gly Asn Thr
1 5 10 15

Val Thr Lys Ala
20

<210> 119
<211> 18
<212> PRT
<213> Neisseria meningitidis

<400> 119

Pro Pro Ser Lys Ser Gln Gly Lys Thr Gly Asn Gln Val Lys Val Thr
1 5 10 15

Lys Ala

<210> 120
<211> 18
<212> PRT
<213> Neisseria meningitidis

<400> 120

Pro Pro Ser Lys Ser Gln Gly Thr Asn Asn Asn Gln Val Lys Val Thr
1 5 10 15

Lys Ala

<210> 121
<211> 18
<212> PRT
<213> Neisseria meningitidis

<400> 121

Pro Pro Ser Lys Ser Gln Pro Gly Gln Val Lys Val Thr Lys Val Thr

1 5 10 15

Lys Ala

<210> 122
<211> 24
<212> PRT
<213> Neisseria meningitidis

<400> 122

Gln Leu Gln Leu Thr Glu Gln Pro Ser Ser Thr Asn Gly Gln Thr Gly
1 5 10 15

Asn Gln Val Lys Val Thr Lys Ala
20

<210> 123
<211> 24
<212> PRT
<213> Neisseria meningitidis

<400> 123

Gln Leu Gln Leu Thr Glu Ala Pro Ser Lys Ser Gln Gly Ala Ala Ser
1 5 10 15

Asn Gln Val Lys Val Thr Lys Ala
20

<210> 124
<211> 19
<212> PRT
<213> Neisseria meningitidis

<400> 124

Ser Ala Tyr Thr Pro Ala His Val Tyr Val Asp Asn Lys Val Ala Lys
1 5 10 15

His Val Ala

<210> 125
<211> 21
<212> PRT
<213> Neisseria meningitidis

<400> 125

Ser Ala Tyr Thr Pro Ala His Phe Val Gln Asn Lys Gln Asn Asn Asn
1 5 10 15

Pro Thr Leu Val Pro
20

<210> 126
 <211> 12
 <212> PRT
 <213> Neisseria meningitidis

<400> 126

Val Glu Gly Arg Asn Tyr Gln Leu Gln Leu Thr Glu
 1 5 10

<210> 127
 <211> 12
 <212> PRT
 <213> Neisseria meningitidis

<400> 127

Pro Ala Gln Asn Ser Lys Ser Ala Tyr Thr Pro Ala
 1 5 10

<210> 128
 <211> 22
 <212> PRT
 <213> Neisseria meningitidis

<400> 128

Gln Leu Gln Leu Thr Glu Pro Pro Ser Lys Asn Gln Ala Gln Thr Gln
 1 5 10 15

Asn Lys Val Thr Lys Ala
 20

<210> 129
 <211> 16
 <212> PRT
 <213> Neisseria meningitidis

<400> 129

Gly Arg Asp Ala Phe Glu Leu Phe Leu Leu Gly Ser Gly Ser Asp Glu
 1 5 10 15

<210> 130
 <211> 31
 <212> PRT
 <213> Neisseria meningitidis

<400> 130

Arg His Ala Asn Val Gly Arg Asp Ala Phe Glu Leu Phe Leu Leu Gly
 1 5 10 15

Ser Gly Ser Asp Glu Ala Lys Gly Thr Asp Pro Leu Lys Asn His
 20 25 30

<210> 131
 <211> 18

<212> PRT
<213> Neisseria meningitidis

<400> 131

Gly Arg Asp Ala Phe Asn Leu Phe Leu Leu Gly Arg Ile Gly Asp Asp
1 5 10 15

Asp Glu

<210> 132
<211> 17
<212> PRT
<213> Neisseria meningitidis

<400> 132

Gly Arg Asn Ala Phe Glu Leu Phe Leu Ile Gly Ser Ala Thr Ser Asp
1 5 10 15

Gln

<210> 133
<211> 15
<212> PRT
<213> Neisseria meningitidis

<400> 133

Gln Val Lys Val Thr Lys Ala Lys Ser Arg Ile Arg Thr Lys Ile
1 5 10 15

<210> 134
<211> 13
<212> PRT
<213> Neisseria meningitidis

<400> 134

Thr Leu Val Pro Ala Val Val Gly Lys Pro Gly Ser Asp
1 5 10

<210> 135
<211> 17
<212> PRT
<213> Neisseria meningitidis

<400> 135

His Ala Lys Ala Ser Ser Ser Leu Gly Ser Ala Lys Gly Phe Ser Pro
1 5 10 15

Arg

<210> 136

<211> 15
<212> PRT
<213> Neisseria meningitidis

<400> 136

Thr Arg Tyr Lys Asn Tyr Lys Ala Pro Ser Thr Asp Phe Lys Leu
1 5 10 15

<210> 137
<211> 18
<212> PRT
<213> Neisseria meningitidis

<400> 137

Ser Leu Asn Arg Ala Ser Val Asp Leu Gly Gly Ser Asp Ser Phe Ser
1 5 10 15

Gln Thr

<210> 138
<211> 21
<212> PRT
<213> Neisseria meningitidis

<400> 138

Gly Lys Val Asn Thr Val Lys Asn Val Arg Ser Gly Glu Leu Ser Ala
1 5 10 15

Gly Val Arg Val Lys
20

<210> 139
<211> 21
<212> PRT
<213> Neisseria meningitidis

<400> 139

Gly Lys Val Asn Thr Val Lys Asn Val Arg Ser Gly Glu Leu Ser Val
1 5 10 15

Gly Val Arg Val Lys
20

<210> 140
<211> 13
<212> PRT
<213> Homo sapiens

<400> 140

Ala Pro Glu Trp Pro Gly Ser Arg Asp Lys Arg Thr Leu
1 5 10

<210> 141
<211> 9
<212> PRT
<213> Homo sapiens

<400> 141

Glu Asp Gly Gln Val Met Asp Val Asp
1 5

<210> 142
<211> 8
<212> PRT
<213> Homo sapiens

<400> 142

Ser Thr Thr Gln Glu Gly Glu Leu
1 5

<210> 143
<211> 10
<212> PRT
<213> Homo sapiens

<400> 143

Gly His Thr Phe Glu Asp Ser Thr Lys Lys
1 5 10

<210> 144
<211> 8
<212> PRT
<213> Homo sapiens

<400> 144

Gly Gly Gly His Phe Pro Pro Thr
1 5

<210> 145
<211> 6
<212> PRT
<213> Homo sapiens

<400> 145

Pro Gly Thr Ile Asn Ile
1 5

<210> 146
<211> 5
<212> PRT
<213> Homo sapiens

<400> 146

Phe Thr Pro Pro Thr
1 5

<210> 147
<211> 8
<212> PRT
<213> Homo sapiens

<400> 147

Ile Asn His Arg Gly Tyr Trp Val
1 5

<210> 148
<211> 17
<212> PRT
<213> Homo sapiens

<400> 148

Gly Glu Phe Cys Ile Asn His Arg Gly Tyr Trp Val Cys Gly Asp Pro
1 5 10 15

Ala

<210> 149
<211> 14
<212> PRT
<213> Homo sapiens

<400> 149

Met Ala Pro Glu Trp Pro Gly Ser Arg Asp Lys Arg Thr Leu
1 5 10

<210> 150
<211> 10
<212> PRT
<213> Homo sapiens

<400> 150

Met Glu Asp Gly Gln Val Met Asp Val Asp
1 5 10

<210> 151
<211> 9
<212> PRT
<213> Homo sapiens

<400> 151

Met Ser Thr Thr Gln Glu Gly Glu Leu
1 5

<210> 152
<211> 11
<212> PRT
<213> Homo sapiens

<400> 152

Met Gly His Thr Phe Glu Asp Ser Thr Lys Lys
1 5 10

<210> 153
<211> 9
<212> PRT
<213> Homo sapiens

<400> 153

Met Gly Gly Gly His Phe Pro Pro Thr
1 5

<210> 154
<211> 7
<212> PRT
<213> Homo sapiens

<400> 154

Met Pro Gly Thr Ile Asn Ile
1 5

<210> 155
<211> 6
<212> PRT
<213> Homo sapiens

<400> 155

Met Phe Thr Pro Pro Thr
1 5

<210> 156
<211> 9
<212> PRT
<213> Homo sapiens

<400> 156

Met Ile Asn His Arg Gly Tyr Trp Val
1 5

<210> 157
<211> 18
<212> PRT
<213> Homo sapiens

<400> 157

Met Gly Glu Phe Cys Ile Asn His Arg Gly Tyr Trp Val Cys Gly Asp
1 5 10 15

Pro Ala

<210> 158
<211> 21
<212> PRT

<213> Hepatitis B virus

<400> 158

Met Gly Thr Asn Leu Ser Val Pro Asn Pro Leu Gly Phe Phe Pro Asp
1 5 10 15

His Gln Leu Asp Pro
20

<210> 159

<211> 8

<212> PRT

<213> Hepatitis B virus

<400> 159

Pro Leu Gly Phe Phe Pro Asp His
1 5

<210> 160

<211> 10

<212> PRT

<213> Hepatitis B virus

<400> 160

Pro Leu Gly Phe Phe Pro Asp His Gln Leu
1 5 10

<210> 161

<211> 26

<212> PRT

<213> Hepatitis B virus

<400> 161

Met Gln Trp Asn Ser Thr Ala Phe His Gln Thr Leu Gln Asp Pro Arg
1 5 10 15

Val Arg Gly Leu Tyr Leu Pro Ala Gly Gly
20 25

<210> 162

<211> 14

<212> PRT

<213> Hepatitis B

<400> 162

Met Gln Trp Ser Thr Ala Phe His Gln Thr Leu Gln Asp Pro
1 5 10

<210> 163

<211> 14

<212> PRT

<213> Hepatitis B virus

<400> 163

Met Gln Trp Ser Thr Ala Leu His Gln Ala Leu Gln Asp Pro
 1 5 10

<210> 164
 <211> 6
 <212> PRT
 <213> Hepatitis B virus

<400> 164

Gln Asp Pro Arg Val Arg
 1 5

<210> 165
 <211> 13
 <212> PRT
 <213> Hepatitis B virus

<400> 165

Asp Pro Arg Val Arg Gly Leu Tyr Leu Pro Ala Gly Gly
 1 5 10

<210> 166
 <211> 13
 <212> PRT
 <213> Hepatitis B virus

<400> 166

Asp Pro Arg Val Arg Gly Leu Tyr Phe Pro Ala Gly Gly
 1 5 10

<210> 167
 <211> 24
 <212> PRT
 <213> B. anthracis

<400> 167

Ile Val Thr Lys Glu Asn Thr Ile Ile Asn Pro Ser Glu Asn Gly Asp
 1 5 10 15

Thr Ser Thr Asn Gly Ile Glu Leu
 20

<210> 168
 <211> 15
 <212> PRT
 <213> Hookworm

<400> 168

Ile Val Tyr Gln His Ser His Gly Glu Asp Arg Pro Gly Glu Leu
 1 5 10 15

<210> 169
 <211> 8

<212> PRT
<213> Artificial Sequence

<220>
<223> linker peptide

<400> 169

Gly Ser Gly Asp Gly Glu Gly Gly
1 5

<210> 170
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> flexible linker arm

<400> 170

Gly Gly Gly Gly Ser Gly Gly Gly Gly Thr
1 5 10

<210> 171
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Flexible linker arm sequence

<400> 171

Gly Gly Gly Gly Ser Gly Gly Gly Gly
1 5

<210> 172
<211> 7
<212> PRT
<213> Artificial sequence

<220>
<223> Flexible linker arm

<400> 172

Gly Ser Gly Asp Glu Gly Gly
1 5

<210> 173
<211> 8
<212> PRT
<213> Artificial sequence

<220>
<223> Flexible linker arm

<400> 173

Gly Gly Gly Gly Ser Gly Gly Gly
1 5

<210> 174
<211> 16
<212> PRT
<213> HIV

<400> 174

Gly Pro Lys Glu Pro Phe Arg Asp Tyr Val Asp Arg Phe Tyr Lys Cys
1 5 10 15

<210> 175
<211> 17
<212> PRT
<213> Corynebacterium diphtheriae

<400> 175

Phe Gln Val Val His Asn Ser Tyr Asn Arg Pro Ala Tyr Ser Pro Gly
1 5 10 15

Cys

<210> 176
<211> 25
<212> PRT
<213> Borrelia burgdorferi

<400> 176

Val Glu Ile Lys Glu Gly Thr Val Thr Leu Lys Arg Glu Ile Asp Lys
1 5 10 15

Asn Gly Lys Val Thr Val Ser Leu Cys
20 25

<210> 177
<211> 19
<212> PRT
<213> Borrelia burgdorferi

<400> 177

Thr Leu Ser Lys Asn Ile Ser Lys Ser Gly Glu Val Ser Val Glu Leu
1 5 10 15

Asn Asp Cys

<210> 178
<211> 11
<212> PRT
<213> Influenza A virus

<400> 178

Ser Ser Val Ser Ser Phe Glu Arg Phe Glu Cys

1 5 10

<210> 179
<211> 10
<212> PRT
<213> Influenza A virus

<400> 179

Leu Ile Asp Ala Leu Leu Gly Asp Pro Cys
1 5 10

<210> 180
<211> 9
<212> PRT
<213> Influenza A virus

<400> 180

Thr Leu Ile Asp Ala Leu Leu Gly Cys
1 5

<210> 181
<211> 24
<212> PRT
<213> Influenza A virus

<400> 181

Phe Trp Arg Gly Glu Asn Gly Arg Lys Thr Arg Ser Ala Tyr Glu Arg
1 5 10 15

Met Cys Asn Ile Leu Lys Gly Lys
20

<210> 182
<211> 22
<212> PRT
<213> Influenza A virus

<400> 182

Leu Arg Val Leu Ser Phe Ile Arg Gly Thr Lys Val Ser Pro Arg Gly
1 5 10 15

Lys Leu Ser Thr Arg Gly
20

<210> 183
<211> 22
<212> PRT
<213> Influenza A virus

<400> 183

Ser Leu Val Gly Ile Asp Pro Phe Lys Leu Leu Gln Asn Ser Gln Val
1 5 10 15

Tyr Ser Leu Ile Arg Pro
20

<210> 184
<211> 24
<212> PRT
<213> Influenza A virus

<400> 184

Ala Val Lys Gly Val Gly Thr Met Val Met Glu Leu Ile Arg Met Ile
1 5 10 15

Lys Arg Gly Ile Asn Asp Arg Asn
20

<210> 185
<211> 21
<212> PRT
<213> Trypanosoma cruzi

<400> 185

Ser His Asn Phe Thr Leu Val Ala Ser Val Ile Ile Glu Glu Ala Pro
1 5 10 15

Ser Gly Asn Thr Cys
20

<210> 186
<211> 16
<212> PRT
<213> Plasmodium falciparum

<400> 186

Ser Val Gln Ile Pro Lys Val Pro Tyr Pro Asn Gly Ile Val Tyr Cys
1 5 10 15

<210> 187
<211> 16
<212> PRT
<213> Plasmodium falciparum

<400> 187

Asp Phe Asn His Tyr Tyr Thr Leu Lys Thr Gly Leu Glu Ala Asp Cys
1 5 10 15

<210> 188
<211> 18
<212> PRT
<213> Plasmodium falciparum

<400> 188

Pro Ser Asp Lys His Ile Glu Gln Tyr Lys Lys Ile Lys Asn Ser Ile
1 5 10 15

Ser Cys

<210> 189
<211> 20
<212> PRT
<213> Plasmodium falciparum

<400> 189

Glu Tyr Leu Asn Lys Ile Gln Asn Ser Leu Ser Thr Glu Trp Ser Pro
1 5 10 15

Cys Ser Val Thr
20

<210> 190
<211> 19
<212> PRT
<213> Plasmodium vivax

<400> 190

Tyr Leu Asp Lys Val Arg Ala Thr Val Gly Thr Glu Trp Thr Pro Cys
1 5 10 15

Ser Val Thr

<210> 191
<211> 20
<212> PRT
<213> Plasmodium yoelii

<400> 191

Glu Phe Val Lys Gln Ile Ser Ser Gln Leu Thr Glu Glu Trp Ser Gln
1 5 10 15

Cys Ser Val Thr
20

<210> 192
<211> 16
<212> PRT
<213> Streptococcus sobrinus

<400> 192

Lys Pro Arg Pro Ile Tyr Glu Ala Lys Leu Ala Gln Asn Gln Lys Cys
1 5 10 15

<210> 193
<211> 17
<212> PRT
<213> Streptococcus sobrinus

<400> 193

Ala Lys Ala Asp Tyr Glu Ala Lys Leu Ala Gln Tyr Glu Lys Asp Leu
1 5 10 15

Cys

<210> 194

<211> 16

<212> PRT

<213> Lymphocytic choriomeningitis virus

<400> 194

Arg Pro Gln Ala Ser Gly Val Tyr Met Gly Asn Leu Thr Ala Gln Cys
1 5 10 15

<210> 195

<211> 16

<212> PRT

<213> Clostridium tetani

<400> 195

Gln Tyr Ile Lys Ala Asn Ser Lys Phe Ile Gly Ile Thr Glu Leu Cys
1 5 10 15

<210> 196

<211> 19

<212> PRT

<213> Neisseria meningitidis

<400> 196

Ala Ile Trp Gln Val Glu Gln Lys Ala Ser Ile Ala Gly Thr Asp Ser
1 5 10 15

Gly Trp Cys

<210> 197

<211> 19

<212> PRT

<213> Neisseria meningitidis

<400> 197

Asn Tyr Lys Asn Gly Gly Phe Phe Val Gln Tyr Gly Gly Ala Tyr Lys
1 5 10 15

Arg His Cys

<210> 198

<211> 19

<212> PRT

<213> Neisseria meningitidis

<400> 198

His Asn Ser Gln Thr Glu Val Ala Ala Thr Leu Ala Tyr Arg Phe Gly
1 5 10 15

Asn Val Cys

<210> 199

<211> 19

<212> PRT

<213> Neisseria meningitidis

<400> 199

Thr. Pro Arg Val Ser Tyr Ala His Gly Phe Lys Gly Leu Val Asp Asp
1 5 10 15

Ala Asp Cys

<210> 200

<211> 19

<212> PRT

<213> Neisseria meningitidis

<400> 200

Arg Phe Gly Asn Ala Val Pro Arg Ile Ser Tyr Ala His Gly Phe Asp
1 5 10 15

Phe Ile Cys

<210> 201

<211> 19

<212> PRT

<213> Neisseria meningitidis

<400> 201

Ala Phe Lys Tyr Ala Arg His Ala Asn Val Gly Arg Asn Ala Phe Glu
1 5 10 15

Leu Phe Cys

<210> 202

<211> 20

<212> PRT

<213> Neisseria meningitidis

<400> 202

Ser Gly Ala Trp Leu Lys Arg Asn Thr Gly Ile Gly Asn Tyr Thr Gln
1 5 10 15

Ile Asn Ala Cys
20

<210> 203
<211> 16
<212> PRT
<213> Neisseria meningitidis

<400> 203

Ala Gly Glu Phe Gly Thr Leu Arg Ala Gly Arg Val Ala Asn Gln Cys
1 5 10 15

<210> 204
<211> 16
<212> PRT
<213> Neisseria meningitidis

<400> 204

Ile Gly Asn Tyr Thr Gln Ile Asn Ala Ala Ser Val Gly Leu Arg Cys
1 5 10 15

<210> 205
<211> 16
<212> PRT
<213> Neisseria meningitidis

<400> 205

Gly Arg Asn Tyr Gln Leu Gln Leu Thr Glu Gln Pro Ser Arg Thr Cys
1 5 10 15

<210> 206
<211> 16
<212> PRT
<213> Neisseria meningitidis

<400> 206

Ser Gly Ser Val Gln Phe Val Pro Ala Gln Asn Ser Lys Ser Ala Cys
1 5 10 15

<210> 207
<211> 16
<212> PRT
<213> Neisseria meningitidis

<400> 207

His Ala Asn Val Gly Arg Asp Ala Phe Asn Leu Phe Leu Leu Gly Cys
1 5 10 15

<210> 208
<211> 16
<212> PRT
<213> Neisseria meningitidis

<400> 208

Leu Gly Arg Ile Gly Asp Asp Asp Glu Ala Lys Gly Thr Asp Pro Cys
 1 5 10 15

<210> 209
 <211> 16
 <212> PRT
 <213> Neisseria meningitidis

<400> 209

Ser Val Gln Phe Val Pro Ala Gln Asn Ser Lys Ser Ala Tyr Lys Cys
 1 5 10 15

<210> 210
 <211> 16
 <212> PRT
 <213> Neisseria meningitidis

<400> 210

Asn Tyr Ala Phe Lys Tyr Ala Lys His Ala Asn Val Gly Arg Asp Cys
 1 5 10 15

<210> 211
 <211> 16
 <212> PRT
 <213> Neisseria meningitidis

<400> 211

Ala His Gly Phe Asp Phe Ile Glu Arg Gly Lys Lys Gly Glu Asn Cys
 1 5 10 15

<210> 212
 <211> 16
 <212> PRT
 <213> Neisseria meningitidis

<400> 212

Gly Val Asp Tyr Asp Phe Ser Lys Arg Thr Ser Ala Ile Val Ser Cys
 1 5 10 15

<210> 213
 <211> 16
 <212> PRT
 <213> Neisseria meningitidis

<400> 213

His Asp Asp Met Pro Val Ser Val Arg Tyr Asp Ser Pro Asp Phe Cys
 1 5 10 15

<210> 214
 <211> 27
 <212> PRT
 <213> Neisseria meningitidis

<400> 214

Arg Phe Gly Asn Ala Val Pro Arg Ile Ser Tyr Ala His Gly Phe Asp
 1 5 10 15

Phe Ile Glu Arg Gly Lys Lys Gly Glu Asn Cys
 20 25

<210> 215
 <211> 24
 <212> PRT
 <213> Neisseria meningitidis

<400> 215

Asn Tyr Ala Phe Lys Tyr Ala Lys His Ala Asn Val Gly Arg Asp Ala
 1 5 10 15

Phe Asn Leu Phe Leu Leu Gly Cys
 20

<210> 216
 <211> 26
 <212> PRT
 <213> Neisseria meningitidis

<400> 216

Ser Gly Ala Trp Leu Lys Arg Asn Thr Gly Ile Gly Asn Tyr Thr Gln
 1 5 10 15

Ile Asn Ala Ala Ser Val Gly Leu Arg Cys
 20 25

<210> 217
 <211> 20
 <212> PRT
 <213> Neisseria meningitidis

<400> 217

Ser Gly Ser Val Gln Phe Val Pro Ala Gln Asn Ser Lys Ser Ala Tyr
 1 5 10 15

Thr Pro Ala Cys
 20

<210> 218
 <211> 19
 <212> PRT
 <213> Neisseria meningitidis

<400> 218

Thr Gly Ala Asn Asn Thr Ser Thr Val Ser Asp Tyr Phe Arg Asn Arg
 1 5 10 15

Ile Thr Cys

<210> 219
 <211> 19
 <212> PRT
 <213> Neisseria meningitidis

<400> 219

Ile Tyr Asp Phe Lys Leu Asn Asp Lys Phe Asp Lys Phe Lys Pro Tyr
 1 5 10 15

Ile Gly Cys

<210> 220
 <211> 19
 <212> PRT
 <213> Neisseria meningitidis

<400> 220

Leu Ser Ala Ile Tyr Asp Phe Lys Leu Asn Asp Lys Phe Lys Pro Tyr
 1 5 10 15

Ile Gly Cys

<210> 221
 <211> 19
 <212> PRT
 <213> Neisseria meningitidis

<400> 221

Asn Gly Trp Tyr Ile Asn Pro Trp Ser Glu Val Lys Phe Asp Leu Asn
 1 5 10 15

Ser Arg Cys

<210> 222
 <211> 20
 <212> PRT
 <213> Hepatitis B virus

<400> 222

Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu
 1 5 10 15

Ser Phe Leu Pro
 20

<210> 223
 <211> 24
 <212> PRT

<213> Hepatitis B virus

<400> 223

Arg Asp Leu Leu Asp Ala Ser Ala Leu Tyr Arg Glu Ala Leu Glu Ser
1 5 10 15

Pro Glu His Cys Ser Pro His His
20

<210> 224

<211> 25

<212> PRT

<213> Hepatitis B virus

<400> 224

Thr Trp Val Gly Val Asn Leu Glu Asp Pro Ala Ser Arg Asp Leu Val
1 5 10 15

Val Ser Tyr Val Asn Thr Asn Met Gly
20 25

<210> 225

<211> 16

<212> PRT

<213> Hepatitis B virus

<400> 225

Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys Phe Arg Gln Leu
1 5 10 15

<210> 226

<211> 21

<212> PRT

<213> Hepatitis B virus

<400> 226

Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg Glu Thr Val
1 5 10 15

Ile Glu Tyr Leu Val
20

<210> 227

<211> 32

<212> PRT

<213> Hepatitis B virus

<400> 227

Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Val Ser Phe Gly Val
1 5 10 15

Trp Ile Arg Thr Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu
20 25 30

<210> 228
<211> 21
<212> PRT
<213> Hepatitis B virus

<400> 228

Val Ser Phe Gly Val Trp Ile Arg Thr Pro Pro Ala Tyr Arg Pro Pro
1 5 10 15

Asn Ala Pro Ile Leu
20

<210> 229
<211> 12
<212> PRT
<213> Hepatitis B virus

<400> 229

Val Ser Phe Gly Val Trp Ile Arg Thr Pro Pro Ala
1 5 10

<210> 230
<211> 12
<212> PRT
<213> Hepatitis B virus

<400> 230

Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu
1 5 10

<210> 231
<211> 12
<212> PRT
<213> Hepatitis B virus

<400> 231

Trp Ile Arg Thr Pro Pro Ala Tyr Arg Pro Pro Asn
1 5 10

<210> 232
<211> 20
<212> PRT
<213> Hepatitis B virus

<400> 232

Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu Leu
1 5 10 15

Met Thr Leu Ala
20

<210> 233

<211> 13
<212> PRT
<213> Artificial sequence

<220>
<223> PADRE eptiope

<400> 233

Ala Lys Phe Val Ala Ala Trp Thr Leu Lys Ala Ala Ala
1 5 10

<210> 234
<211> 549
<212> DNA
<213> Hepatitis B virus

<400> 234

atggacatcg acccttataa agaatttgga gctactgtgg agttactctc gtttttgcct
60

tctgacttct ttccttcagt acgagatctt ctagataccg cctcagctct gtatcgggaa
120

gccttagagt ctctgagca ttgttcacct caccatactg cactcaggca agcaattctt
180

tgctgggggg aactaatgac tctagctacc tgggtgggtg ttaatttgga agatccagcg
240

tctagagacc tagtagtcag ttatgtcaac actaatatgg gcctaaagtt caggcaactc
300

ttgtgggtttc acatttcttg tctcactttt ggaagagaaa cagttataga gtatttggtg
360

tctttcggag tgtggattcg cactcctcca gcttatagac caccaaagtc ccctatccta
420

tcaacacttc cggagactac tgttggttaga cgacgaggca ggtcccctag aagaagaact
480

ccctcgctc gcagacgaag gtctcaatcg ccgcgtcgca gaagatctca atctcgggaa
540

tctcaatgt
549

<210> 235
<211> 555
<212> DNA
<213> Hepatitis B virus

<400> 235

atggacattg acccttataa agaatttgga gctactgtgg agttactctc gtttttgcct
60

tctgacttct ttccttcctg acgagatctc ctagacaccg cctcagctct gtatcgagaa
120

gccttagagt ctctgagca ttgttcacct caccatactg cactcaggca agccattctc
180

tgctgggggg aattgatgac tctagctacc tgggtgggta ataatttgca agatccagca
240

tccagagatc tagtagtcaa ttatgttaat actaacatgg gtttaaagat caggcaacta
300

ttgtgggttc atatatcttg ccttactttt ggaagagaga ctgtacttga atatttggtc
360

tctttcggag tgtggattcg cactcctcca gcctatagac caccaaatgc ccctatctta
420

tcaacacttc cggaaactac tgttgttaga cgacgggacc gaggcaggtc ccctagaaga
480

agaactccct cgcctcgcag acgcagatct caatcgccgc gtcgcagaag atctcaatct
540

cgggaatctc aatgt
555

<210> 236
<211> 555
<212> DNA
<213> Hepatitis B virus

<400> 236
atggacattg acccttataa agaatttgga gctactgtgg agttactctc gtttttgcct
60

tctgacttct ttccttccgt cagagatctc ctagacaccg cctcagctct gtatcgagaa
120

gccttagagt ctcttgagca ttgctcacct caccatactg cactcaggca agccattctc
180

tgctgggggg aattgatgac tctagctacc tgggtgggta ataatttgga agatccagca
240

tctagggatc ttgtagtaaa ttatgttaat actaacgtgg gtttaaagat caggcaacta
300

ttgtgggttc atatatcttg ccttactttt ggaagagaga ctgtacttga atatttggtc
360

tctttcggag tgtggattcg cactcctcca gcctatagac caccaaatgc ccctatctta
420

tcaacacttc cggaaactac tgttgttaga cgacgggacc gaggcaggtc ccctagaaga
480

agaactccct cgcctcgcag acgcagatct ccatcgccgc gtcgcagaag atctcaatct
540

cgggaatctc aatgt
555

<210> 237
<211> 549
<212> DNA
<213> Hepatitis B virus

<400> 237

atggacattg acccttataa agaatttggg gctactgtgg agttactctc gtttttgcct
60

tctgacttct ttccttccgt acgagatctt ctagataccg ccgcagctct gtatcgggat
120

gccttagagt ctcttgagca ttgttcacct caccatactg cactcaggca agcaattctt
180

tgctggggag acttaatgac tctagctacc tgggtgggta ctaatttaga agatccagca
240

tctagggacc tagtagtcag ttatgtcaac actaatgtgg gcctaaagtt cagacaatta
300

ttgtgggttc acatttcttg tctcactttt ggaagagaaa cggttctaga gtatttggtg
360

tcttttggag tgtggattcg cactcctcca gcttatagac caccaaagtc ccctatccta
420

tcaacgcttc cggagactac tggtgttaga cgacgaggca ggtcccctag aagaagaact
480

ccctgcctc gcagacgaag atctcaatcg ccgcgtcgca gaagatctca atctcgggaa
540

tctcaatgt
549

<210> 238

<211> 549

<212> DNA

<213> Woodchuck

<400> 238

atggcttttg ggcattggaca tagatcctta taaagaattt gggtcatctt atcagttggt
60

gaattttctt cctttggact tctttcctga tcttaatgct ttggtggaca ctgctactgc
120

cttgtatgaa gaagaactaa caggtaggga acattgctct ccgcaccata cagctattag
180

acaagcttta gtatgctggg atgaattaac taaattgata gcttggatga gctctaacat
240

aacttctgaa caagtaagaa caatcattgt aaatcatgtc aatgatacct ggggacttaa
300

ggtgagacaa agtttatggt ttcatttgtc atgtctcact ttcggacaac atacagttca
360

agaattttta gtaagttttg gagtatggat caggactcca gctccatata gacctcctaa
420

tgcacccatt ctctcgactc ttccggaaca tacagtcatt aggagaagag gaggtgcaag
480

agcttctagg tccccagaa gacgcactcc ctctcctcgc aggagaagat ctcaatcacc
540

gcgtcgcag
549

<210> 239
<211> 651
<212> DNA
<213> Ground squirrel

<400> 239
atgtatcttt ttcacctgtg ccttggtttt gcctgtgttc catgtcctac tgttcaagcc
60

tccaagctgt gccttggatg gctttgggac atggacatag atccctataa agaatttggg
120

tcttcttatac agttgttgaa ttttcttcct ttggactttt ttcctgatct caatgcattg
180

gtggacactg ctgctgctct ttatgaagaa gaattaacag gtagggagca ttgttctcct
240

catcatactg ctattagaca ggccttagtg tgttgggaag aattaactag attaattaca
300

tggatgagtg aaaatacaac agaagaagtt agaagaatta ttgttgatca tgtcaataat
360

acttggggac ttaaagtaag acagacttta tggtttcatt tatcatgtct tacttttgga
420

caacacacag ttcaagaatt tttggttagt tttggagtat ggattagaac tccagctcct
480

tatagaccac ctaatgcacc cattttatca actcttccgg aacatacagt cattaggaga
540

agaggagggt caagagctgc taggtcccc cgaagacgca ctccctctcc tcgcaggaga
600

aggctctcaat caccgcgtcg cagacgctct caatctccag cttccaactg c
651

<210> 240
<211> 18
<212> DNA
<213> Artificial sequence

<220>
<223> primer

<400> 240
ggtgcatgca aggagatg
18

<210> 241
<211> 55
<212> DNA
<213> Artificial sequence

<220>
<223> primer

<400> 241
gcgaagcttc ggatcccatg gttttttcct ccttatgtga aattgttatc cgctc
55

<210> 242
<211> 24
<212> DNA
<213> Artificial sequence

<220>
<223> primer

<400> 242
ttgggccatg gacatcgacc ctta
24

<210> 243
<211> 31
<212> DNA
<213> Artificial sequence

<220>
<223> primer

<400> 243
cgcaagctta aacaacagta gtctccggaa g
31

<210> 244
<211> 43
<212> DNA
<213> Artificial sequence

<220>
<223> primer

<400> 244
gtttctcttc caaaagtgag gctagaaatg tgaaaccaca aga
43

<210> 245
<211> 20
<212> DNA
<213> Artificial sequence

<220>
<223> primer

<400> 245
ctcacttttg gaagagaaac
20

<210> 246
<211> 39
<212> DNA
<213> Artificial sequence

<220>
<223> primer

<400> 246
gagcgcagta tggtagggtg agctatgctc aggagactc
39

<210> 247
<211> 25
<212> DNA
<213> Artificial sequence

<220>
<223> primer

<400> 247
gaggcgctca ggcaagcaat tcttt
25

<210> 248
<211> 35
<212> DNA
<213> Artificial sequence

<220>
<223> primer

<400> 248
cgcaagctta ctagcaaaca acagtagtct cggaa
35

<210> 249
<211> 49
<212> DNA
<213> Artificial sequence

<220>
<223> primer

<400> 249
gcgctcttcc aaaagtgagg ctagaaatgc aaaaccacaa gagttgcct
49

<210> 250
<211> 42
<212> DNA
<213> Artificial sequence

<220>
<223> primer

<400> 250
gcggggcccat attagtgttg caataactga ctactagggtc tc
42

<210> 251
<211> 50
<212> DNA
<213> Artificial sequence

<220>
<223> primer

<400> 251
gcggctcgcc ccagcaaaga attgcttggtc tacacgcagt atggtgaggt
50

<210> 252
<211> 27
<212> DNA
<213> Artificial sequence

<220>
<223> primer

<400> 252
ggggcgagct aatgactcta gctacct
27

<210> 253
<211> 43
<212> DNA
<213> Artificial sequence

<220>
<223> primer

<400> 253
gcggctcgcc ccagcaaaga atgcattgcc tgagcgcagt atg
43

<210> 254
<211> 20
<212> DNA
<213> Artificial sequence

<220>
<223> primer

<400> 254
ttaggcccat attagtgttg
20

<210> 255
<211> 44
<212> DNA
<213> Artificial sequence

<220>
<223> primer

<400> 255
gcggggccta aagttcaggc aatgcttggtg gtttcacatt tcta
44

<210> 256
<211> 31
<212> DNA
<213> Artificial sequence

<220>
<223> primer

<400> 256
gcgccagggtg catagagtca ttagttcccc c
31

<210> 257

<211> 17
<212> DNA
<213> Artificial sequence

<220>
<223> primer

<400> 257
ctacctgggt gggtgtt
17

<210> 258
<211> 19
<212> DNA
<213> Artificial sequence

<220>
<223> primer

<400> 258
tatgggccta aagttcagg
19

<210> 259
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<212> DNA
<213> Artificial sequence

<220>
<223> primer

<400> 259
gcggctcgcc gcagcaaaga attgcttgtc tgagcgcagt atggtgagg
49

<210> 260
<211> 33
<212> DNA
<213> Artificial sequence

<220>
<223> primer

<400> 260
gcggggccta aagtgcaggc aactcttggtg gtt
33

<210> 261
<211> 29
<212> DNA
<213> Artificial sequence

<220>
<223> primer

<400> 261
gcggctagct ggatcttcgc aattaacac
29

<210> 262
<211> 28

<212> DNA
<213> Artificial sequence

<220>
<223> primer

<400> 262
gcggctagct gcgacctagt agtcagtt
28

<210> 263
<211> 24
<212> DNA
<213> Hepatitis B virus

<400> 263
ttggggccatg gacatcgacc ctta
24

<210> 264
<211> 31
<212> DNA
<213> Hepatitis B virus

<400> 264
gcggaattcc atcttccaaa ttaacaccca c
31

<210> 265
<211> 39
<212> DNA
<213> Hepatitis B virus

<400> 265
cgcggaattca aaaagagctc ccagcgtcta gagacctag
39

<210> 266
<211> 31
<212> DNA
<213> Hepatitis B virus

<400> 266
cgcaagctta aacaacagta gtctccggaa g
31

<210> 267
<211> 37
<212> DNA
<213> Artificial Sequence

<220>
<223> Amplification primer containing a restriction endonuclease
site

<400> 267
cgcaagctta ctagcaaaca acagtagtct ccggaag
37

<210> 268

<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> Amplification primer containing a restriction endonuclease site

<400> 268
ggaaagctta ctaacattga gattcccg
28

<210> 269
<211> 31
<212> DNA
<213> Artificial sequence

<220>
<223> primer

<400> 269
gcggaattcc atcttccaaa ttaacaccca c
31

<210> 270
<211> 30
<212> DNA
<213> Artificial sequence

<220>
<223> primer

<400> 270
gcggaattcc atcttcgcaa ttaacaccca
30

<210> 271
<211> 39
<212> DNA
<213> Artificial sequence

<220>
<223> primer

<400> 271
cggaattca aaaagagctc ccagcgtcta gagacctag
39

<210> 272
<211> 37
<212> DNA
<213> Artificial sequence

<220>
<223> primer

<400> 272
gcggaattca aaaagagctc ccagctagct gcgacct
37

<210> 273

<211> 108
<212> DNA
<213> Artificial sequence

<220>
<223> primer

<400> 273
aattctggat gcggaatttc gtcatgacag cggctatgag gtgcaccatc agaaactggt
60

tttctttgcc gaagatgtcg gttctaacaa gggggcaatt atcgagct
108

<210> 274
<211> 72
<212> DNA
<213> Artificial sequence

<220>
<223> primer

<400> 274
aattgtcacg aaagaaaata ctataattaa cccttctgag aatggtgaca cctccacgaa
60

cgggatcgag ct
72

<210> 275
<211> 45
<212> DNA
<213> Artificial sequence

<220>
<223> primer

<400> 275
aattgtttat cagcattctc acggcgaaga tcgtccaggt gagct
45

<210> 276
<211> 78
<212> DNA
<213> Artificial sequence

<220>
<223> primer

<400> 276
aatttctctg ttaaccgaag tggagacgcc gattcgtaac gaatggggta gccgctctaa
60

tgatagctct gacgagct
78

<210> 277
<211> 12
<212> PRT
<213> Hepatitis B virus

<400> 277

cgcgagctcc cagcgtctag agacctag
28

<210> 283

<211> 17

<212> DNA

<213> Artificial Sequence

<220>

<223> Amplification primer containing a restriction endonuclease site

<400> 283

gtatcaggct gaaaatc
17

<210> 284

<211> 19

<212> PRT

<213> Plasmodium falciparum

<400> 284

Ile Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn
1 5 10 15

Pro Glu Leu

<210> 285

<211> 57

<212> DNA

<213> Plasmodium falciparum

<400> 285

aattaacgct aatccgaacg ctaatccgaa cgctaataccg aacgctaatac cggagct
57

<210> 286

<211> 49

<212> DNA

<213> Plasmodium falciparum

<400> 286

ccggattagc gttcggatta gcgttcggat tagcggttcgg attagcggt
49

<210> 287

<211> 31

<212> PRT

<213> Plasmodium falciparum

<400> 287

Ile Asn Ala Asn Pro Asn Val Asp Pro Asn Ala Asn Pro Asn Ala Asn
1 5 10 15

Pro Asn Ala Asn Pro Asn Val Asp Pro Asn Ala Asn Pro Glu Leu
20 25 30

<210> 288
 <211> 93
 <212> DNA
 <213> Plasmodium falciparum

<400> 288
 aattaacgct aatccgaacg ttgacccgaa cgctaataccg aacgctaata cgaacgctaa
 60
 tccgaacggtt gacccgaacg ctaatccgga gct
 93

<210> 289
 <211> 91
 <212> DNA
 <213> Plasmodium falciparum

<400> 289
 ggagctccgg attagcggtc ggggtcaacgt tcggattagc gttcggatta gcgttcggat
 60
 tagcggttcgg gtcaacggtc ggattagcgt t
 91

<210> 290
 <211> 23
 <212> PRT
 <213> Plasmodium falciparum

<400> 290
 Ile Asn Ala Asn Pro Asn Val Asp Pro Asn Ala Asn Pro Asn Ala Asn
 1 5 10 15
 Pro Asn Ala Asn Pro Glu Leu
 20

<210> 291
 <211> 69
 <212> DNA
 <213> Plasmodium falciparum

<400> 291
 aattaacgcg aatccgaacg tggatccgaa tgccaaccct aacgccaacc caaatgacgaa
 60
 cccagagct
 69

<210> 292
 <211> 61
 <212> DNA
 <213> Plasmodium falciparum

<400> 292
 ctgggttcgc atttgggttg gcgttagggg tggcattcgg atccacgttc ggattcgcgt
 60

t
61

<210> 293
<211> 23
<212> PRT
<213> Plasmodium falciparum

<400> 293

Ile Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Val Asp
1 5 10 15

Pro Asn Ala Asn Pro Glu Leu
20

<210> 294
<211> 69
<212> DNA
<213> Plasmodium falciparum

<400> 294
aattaacgcg aatccgaatg ccaaccctaa cgccaaccca aacgtggatc cgaatgcgaa
60

cccagagct
69

<210> 295
<211> 61
<212> DNA
<213> Plasmodium falciparum

<400> 295
ctggggttcgc attcggatcc acgtttgggt tggcgtagg gttggcattc ggattcgcgt
60

t
61

<210> 296
<211> 31
<212> PRT
<213> Plasmodium falciparum

<400> 296

Ile Asn Ala Asn Pro Asn Val Asp Pro Asn Ala Asn Pro Asn Ala Asn
1 5 10 15

Pro Asn Ala Asn Pro Asn Val Asp Pro Asn Ala Asn Pro Glu Leu
20 25 30

<210> 297
<211> 93
<212> DNA
<213> Plasmodium falciparum

<400> 297

aattaacgcg aatccgaacg tggatccaaa tgccaaccct aacgctaatac caaacgccaa
60

cccgaatggt gaccccaatg ccaatccgga gct
93

<210> 298
<211> 85
<212> DNA
<213> Plasmodium falciparum

<400> 298
ccggattggc attgggggtca acattcgggt tggcgtttgg attagcgta gggttggcat
60

ttggatccac gttcggattc gcgtt
85

<210> 299
<211> 23
<212> PRT
<213> Plasmodium falciparum

<400> 299

Ile Asn Pro Asn Val Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn`
1 5 10 15

Ala Asn Pro Asn Val Glu Leu
20

<210> 300
<211> 69
<212> DNA
<213> Plasmodium falciparum

<400> 300
aattaatccg aacgtggatc caaatgccaa ccctaacgct aatccaaacg ccaaccgaa
60

tgttgagct
69

<210> 301
<211> 61
<212> DNA
<213> Plasmodium falciparum

<400> 301
caacattcgg gttggcgttt ggattagcgt tagggttggc atttggatcc acgttcggat
60

t
61

<210> 302
<211> 25
<212> PRT
<213> Plasmodium falciparum

<400> 302

Ile Asn Pro Asn Val Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn
1 5 10 15

Ala Asn Pro Asn Val Asp Pro Glu Leu
20 25

<210> 303

<211> 75

<212> DNA

<213> Plasmodium falciparum

<400> 303

aattaatccg aacgtggatc caaatgccaa ccctaacgct aatccaaacg ccaaccgaa
60

tgttgaccct gagct
75

<210> 304

<211> 67

<212> DNA

<213> Plasmodium falciparum

<400> 304

caggggtcaac attcgggttg gcgtttggat tagcgtagg gttggcattt ggatccacgt
60

tcggatt
67

<210> 305

<211> 27

<212> PRT

<213> Plasmodium falciparum

<400> 305

Ile Asn Pro Asn Val Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn
1 5 10 15

Ala Asn Pro Asn Val Asp Pro Asn Ala Glu Leu
20 25

<210> 306

<211> 81

<212> DNA

<213> Plasmodium falciparum

<400> 306

aattaatccg aacgtggatc caaatgccaa ccctaacgct aatccaaacg ccaaccgaa
60

tgttgaccct aatgctgagc t
81

<210> 307

<211> 73

<212> DNA
<213> Plasmodium falciparum

<400> 307
cagcattagg gtcaacattc gggttggcgt ttggattagc gttagggttg gcatttggat
60

ccacgttcgg att
73

<210> 308
<211> 21
<212> PRT
<213> Plasmodium falciparum

<400> 308

Ile Asn Val Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn
1 5 10 15

Pro Asn Val Glu Leu
20

<210> 309
<211> 63
<212> DNA
<213> Plasmodium falciparum

<400> 309
aattaacgtg gatccaaatg ccaaccctaa cgctaattcca aacgccaacc cgaatgttga
60

gct
63

<210> 310
<211> 55
<212> DNA
<213> Plasmodium falciparum

<400> 310
caacattcgg gttggcgttt ggattagcgt tagggttggc atttgatcc acgtt
55

<210> 311
<211> 23
<212> PRT
<213> Plasmodium falciparum

<400> 311

Ile Asn Val Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn
1 5 10 15

Pro Asn Val Asp Pro Glu Leu
20

<210> 312
<211> 69

<212> DNA
 <213> Plasmodium falciparum

 <400> 312
 aattaacgtg gatccaaatg ccaaccctaa cgctaatacca aacgccaacc cgaatggtga
 60

 ccctgagct
 69

 <210> 313
 <211> 61
 <212> DNA
 <213> Plasmodium falciparum

 <400> 313
 cagggtcaac attcgggttg gcgtttggat tagcgtagg gttggcattt ggatccacgt
 60

 t
 61

 <210> 314
 <211> 25
 <212> PRT
 <213> Plasmodium falciparum

 <400> 314
 Ile Asn Val Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn
 1 5 10 15

 Pro Asn Val Asp Pro Asn Ala Glu Leu
 20 25

 <210> 315
 <211> 75
 <212> DNA
 <213> Plasmodium falciparum

 <400> 315
 aattaacgtg gatccaaatg ccaaccctaa cgctaatacca aacgccaacc cgaatggtga
 60

 ccctaagtct gagct
 75

 <210> 316
 <211> 67
 <212> DNA
 <213> Plasmodium falciparum

 <400> 316
 cagcattagg gtcaacattc gggttggcgt ttggattagc gttagggttg gcatttggat
 60

 ccacggtt
 67

 <210> 317

<211> 19
<212> PRT
<213> Plasmodium falciparum

<400> 317

Ile Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn
1 5 10 15

Val Glu Leu

<210> 318
<211> 57
<212> DNA
<213> Plasmodium falciparum

<400> 318
aattgatcca aatgcccaacc ctaacgctaa tccaaacgcc aaccggaatg ttgagct
57

<210> 319
<211> 49
<212> DNA
<213> Plasmodium falciparum

<400> 319
caacattcgg gttggcggtt ggattagcgt taggggtggc atttggatc
49

<210> 320
<211> 21
<212> PRT
<213> Plasmodium falciparum

<400> 320

Ile Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn
1 5 10 15

Val Asp Pro Glu Leu
20

<210> 321
<211> 63
<212> DNA
<213> Plasmodium falciparum

<400> 321
aattgatcca aatgcccaacc ctaacgctaa tccaaacgcc aaccggaatg ttgaccctga
60

gct
63

<210> 322
<211> 55
<212> DNA
<213> Plasmodium falciparum

<400> 322
cagggtcaac attcgggttg gcgtttggat tagcgtagg gttggcattt ggatc
55

<210> 323
<211> 23
<212> PRT
<213> Plasmodium falciparum

<400> 323
Ile Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn
1 5 10 15

Val Asp Pro Asn Ala Glu Leu
20

<210> 324
<211> 69
<212> DNA
<213> Plasmodium falciparum

<400> 324
aattgatcca aatgccaacc ctaacgctaa tccaaacgcc aaccggaatg ttgaccctaa
60

tgccgagct
69

<210> 325
<211> 61
<212> DNA
<213> Plasmodium falciparum

<400> 325
cggcattagg gtcaacattc gggttggcgt ttggattagc gttagggttg gcatttggat
60

c
61

<210> 326
<211> 21
<212> PRT
<213> Plasmodium falciparum

<400> 326
Ile Glu Tyr Leu Asn Lys Ile Gln Asn Ser Leu Ser Thr Glu Trp Ser
1 5 10 15

Pro Cys Ser Val Thr
20

<210> 327
<211> 69
<212> DNA
<213> Plasmodium falciparum

<400> 327
aattgaatat ctgaacaaaa tccagaactc tctgtccacc gaatggtctc cgtgctccgt
60

tacctagta
69

<210> 328
<211> 69
<212> DNA
<213> Plasmodium falciparum

<400> 328
agcttactag gtaacggagc acggagacaa ttcggtggac agagagttct ggattttggt
60

cagatatct
69

<210> 329
<211> 24
<212> PRT
<213> Plasmodium vivax

<400> 329

Ile Pro Ala Gly Asp Arg Ala Asp Gly Gln Pro Ala Gly Asp Arg Ala
1 5 10 15

Ala Gly Gln Pro Ala Gly Glu Leu
20

<210> 330
<211> 72
<212> DNA
<213> Plasmodium vivax

<400> 330
aattccggct ggtgaccgtg cagatggcca gccagcgggt gaccgcgctg caggccagcc
60

ggctggcgag ct
72

<210> 331
<211> 64
<212> DNA
<213> Plasmodium vivax

<400> 331
cgccagccgg ctggcctgca gcgcggtcac ccgctggctg gccatctgca cggtcaccag
60

ccgg
64

<210> 332
<211> 21
<212> PRT

<213> Plasmodium vivax

<400> 332

Ile Asp Arg Ala Ala Gly Gln Pro Ala Gly Asp Arg Ala Asp Gly Gln
1 5 10 15

Pro Ala Gly Glu Leu
20

<210> 333

<211> 63

<212> DNA

<213> Plasmodium vivax

<400> 333

aattgacaga gcagccggac aaccagcagg cgatcgagca gacggacagc ccgcagggga
60

gct
63

<210> 334

<211> 55

<212> DNA

<213> Plasmodium vivax

<400> 334

ccccgcggg ctgtccgtct gctcgatcgc ctgctggttg tccggctgct ctgtc
55

<210> 335

<211> 21

<212> PRT

<213> Plasmodium vivax

<400> 335

Ile Ala Asn Gly Ala Gly Asn Gln Pro Gly Ala Asn Gly Ala Gly Asp
1 5 10 15

Gln Pro Gly Glu Leu
20

<210> 336

<211> 63

<212> DNA

<213> Plasmodium vivax

<400> 336

aattgcgaac ggccgccgta atcagccggg ggcaaacggc gcgggtgatc aaccagggga
60

gct
63

<210> 337

<211> 55

<212> DNA

<213> Plasmodium vivax

<400> 337

cccctggttg atcacccgcg ccgtttgccc ccggctgatt accggcgccg ttcgc
55

<210> 338

<211> 21

<212> PRT

<213> Plasmodium vivax

<400> 338

Ile Ala Asn Gly Ala Asp Asn Gln Pro Gly Ala Asn Gly Ala Asp Asp
1 5 10 15

Gln Pro Gly Glu Leu
20

<210> 339

<211> 63

<212> DNA

<213> Plasmodium vivax

<400> 339

aattgcgaac ggcgccgata atcagccggg tgcaaacggg gcggatgacc aaccaggcga
60

gct
63

<210> 340

<211> 55

<212> DNA

<213> Plasmodium vivax

<400> 340

cgcttggttg gtcattccgc ccgtttgcac ccggctgatt atcggcgccg ttcgc
55

<210> 341

<211> 39

<212> PRT

<213> Plasmodium vivax

<400> 341

Ile Ala Asn Gly Ala Gly Asn Gln Pro Gly Ala Asn Gly Ala Gly Asp
1 5 10 15

Gln Pro Gly Ala Asn Gly Ala Asp Asn Gln Pro Gly Ala Asn Gly Ala
20 25 30

Asp Asp Gln Pro Gly Glu Leu
35

<210> 342

<211> 117

<212> DNA
 <213> Plasmodium vivax

 <400> 342
 aattgcgaac ggcgccggtg atcagccggg agcaaaccgc gcgggggatc aaccaggcgc
 60

 caatggtgca gacaaccagc ctggggcgaa tggagccgat gaccaaccgc gcgagct
 117

 <210> 343
 <211> 109
 <212> DNA
 <213> Plasmodium vivax

 <400> 343
 cgccgggttg gtcacggtt ccattcgccc caggctggtt gtctgcacca ttggcgctg
 60

 gttgatcccc cgcgccgttt gctcccggtt gattaccggc gccgttcgc
 109

 <210> 344
 <211> 25
 <212> PRT
 <213> Plasmodium vivax

 <400> 344
 Ile Ala Pro Gly Ala Asn Gln Glu Gly Gly Ala Ala Ala Pro Gly Ala
 1 5 10 15

 Asn Gln Glu Gly Gly Ala Ala Glu Leu
 20 25

 <210> 345
 <211> 75
 <212> DNA
 <213> Plasmodium vivax

 <400> 345
 aattgcgccg ggcgccaacc aggaaggtgg ggctgcagcg ccaggagcca atcaagaagg
 60

 cggctgcagcg gagct
 75

 <210> 346
 <211> 67
 <212> DNA
 <213> Plasmodium vivax

 <400> 346
 ccgctgcacc gccttcttga ttggctcctg gcgctgcagc cccaccttcc tggttggcgc
 60

 ccggcgc
 67

 <210> 347

<211> 26
<212> PRT
<213> Artificial Sequence

<220>
<223> Amplification primer containing a restriction endonuclease site

<400> 347

Ile Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly
1 5 10 15

Cys Arg Cys Asn Asp Ser Ser Asp Glu Leu
20 25

<210> 348
<211> 78
<212> DNA
<213> Artificial Sequence

<220>
<223> Amplification primer containing a restriction endonuclease site

<400> 348
aattagcctg ttaaccgaag tggagacgcc gatccgtaac gaatggggct gccgctgtaa
60

tgattcttcc gacgagct
78

<210> 349
<211> 70
<212> DNA
<213> Artificial Sequence

<220>
<223> Amplification primer containing a restriction endonuclease site

<400> 349
cgtcggaaga atcattacag cggcagcccc attcgttacg gatcggcgtc tccacttcgg
60

ttaacaggct
70

<210> 350
<211> 26
<212> PRT
<213> Artificial Sequence

<220>
<223> Amplification primer containing a restriction endonuclease site

<400> 350

Met Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly
1 5 10 15

Cys Arg Cys Asn Asp Ser Ser Asp Glu Leu
20 25

<210> 351
<211> 78
<212> DNA
<213> Artificial Sequence

<220>
<223> Amplification primer containing a restriction endonuclease site

<400> 351
catgtctctg ctgaccgaag ttgaaacccc tatcagaaac gaatgggggt gcagatgtaa
60

cgattcaagt gatgagct
78

<210> 352
<211> 70
<212> DNA
<213> Artificial Sequence

<220>
<223> Amplification primer containing a restriction endonuclease site

<400> 352
catcacttga atcgttacat ctgcaccccc attcgtttct gatagggggt tcaacttcgg
60

tcagcagaga
70

<210> 353
<211> 26
<212> PRT
<213> Artificial Sequence

<220>
<223> Amplification primer containing a restriction endonuclease site

<400> 353

Met Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly
1 5 10 15

Ser Arg Cys Asn Asp Ser Ser Asp Glu Leu
20 25

<210> 354
<211> 78
<212> DNA
<213> Artificial Sequence

<220>
<223> Amplification primer containing a restriction endonuclease site

<400> 354
catgtctctg ctgaccgaag ttgaaacccc tatcagaaac gaatgggggt ctagatgtaa
60

cgattcaagt gatgagct
78

<210> 355
<211> 70
<212> DNA
<213> Artificial Sequence

<220>
<223> Amplification primer containing a restriction endonuclease
site

<400> 355
catcacttga atcgttacat ctagaccccc attcgtttct gatagggggt tcaacttcgg
60

tcagcagaga
70

<210> 356
<211> 26
<212> PRT
<213> Artificial Sequence

<220>
<223> Amplification primer containing a restriction endonuclease
site

<400> 356

Met	Ser	Leu	Leu	Thr	Glu	Val	Glu	Thr	Pro	Ile	Arg	Asn	Glu	Trp	Gly
1				5					10					15	

Cys	Arg	Ser	Asn	Asp	Ser	Ser	Asp	Glu	Leu
			20					25	

<210> 357
<211> 78
<212> DNA
<213> Artificial Sequence

<220>
<223> Amplification primer containing a restriction endonuclease
site

<400> 357
catgtctctg ctgaccgaag ttgaaacccc tatcagaaac gaatgggggt gcagatcgaa
60

cgattcaagt gatgagct
78

<210> 358
<211> 70
<212> DNA
<213> Artificial Sequence

<220>
<223> Amplification primer containing a restriction endonuclease site

<400> 358
catcacttga atcgttcgat ctgcaccccc attcgtttct gataggggtt tcaacttcgg
60

tcagcagaga
70

<210> 359
<211> 26
<212> PRT
<213> Influenza A virus

<400> 359

Ile Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly
1 5 10 15

Ser Arg Ser Asn Asp Ser Ser Asp Glu Leu
20 25

<210> 360
<211> 78
<212> DNA
<213> Influenza A virus

<400> 360
aattttctctg ttaaccgaag tggagacgcc gattcgtaac gaatggggta gccgctctaa
60

tgatagctct gacgagct
78

<210> 361
<211> 70
<212> DNA
<213> Influenza A virus

<400> 361
cgtcagagct atcattagag cggctacccc attcgttacg aatcggcgtc tccacttcgg
60

ttaacagaga
70

<210> 362
<211> 26
<212> PRT
<213> Artificial Sequence

<220>
<223> Amplification primer containing a restriction endonuclease site

<400> 362

Met Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly

1 5 10 15

Ser Arg Ser Asn Asp Ser Ser Asp Glu Leu
20 25

<210> 363
<211> 78
<212> DNA
<213> Artificial Sequence

<220>
<223> Amplification primer containing a restriction endonuclease site

<400> 363
catgtctctg ctgaccgaag ttgaaacccc tatcagaaac gaatgggggt ctagatcgaa
60
cgattcaagt gatgagct
78

<210> 364
<211> 70
<212> DNA
<213> Artificial Sequence

<220>
<223> Amplification primer containing a restriction endonuclease site

<400> 364
catcacttga atcgttcgat ctagaccccc attcgtttct gatagggggt tcaacttcgg
60
tcagcagaga
70

<210> 365
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Amplification primer containing a restriction endonuclease site

<400> 365
gcgggatccg gagcttatcg a
21

<210> 366
<211> 24
<212> PRT
<213> Artificial sequence

<220>
<223> Amplification primer containing a restriction site

<400> 366

Gly Cys Gly Cys Thr Cys Gly Ala Gly Ala Thr Cys Ala Cys Thr Thr

1

5

10

15

Gly Ala Ala Thr Cys Gly Thr Thr
20

<210> 367

<211> 33

<212> DNA

<213> Artificial sequence

<220>

<223> Amplification primer containing a restriction site

<400> 367

gcgctcgaga gcttattgac cgaagttgaa acc

33

<210> 368

<211> 24

<212> DNA

<213> Artificial sequence

<220>

<223> Amplification primer containing restriction site

<400> 368

gcgctgcaga tcacttgaat cggt

24

<210> 369

<211> 25

<212> DNA

<213> Artificial sequence

<220>

<223> Amplification primer containing a restriction site

<400> 369

gcgctgcagt ctctgctgac cgaag

25

<210> 370

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Amplification primer containing a restriction endonuclease site

<400> 370

cgcgacatgt ctctgctgac cg

22

<210> 371

<211> 31

<212> DNA

<213> Artificial sequence

<220>

<223> oligonucleotide

<400> 371
cgcaagctta aacaacagta gtctccggaa g
31

<210> 372
<211> 52
<212> DNA
<213> Artificial Sequence

<220>
<223> Amplification primer containing a restriction endonuclease
site

<400> 372
gcgaagctta ctaaggggag cggcctcgtc gacgaacaac agtagtctcc gg
52

<210> 373
<211> 55
<212> DNA
<213> Artificial Sequence

<220>
<223> Amplification primer containing a restriction endonuclease
site

<400> 373
gcgaagctta ctaacaaggg gagcggcctc gtcgacgaac aacagtagtc tccgg
55

<210> 374
<211> 49
<212> DNA
<213> Artificial Sequence

<220>
<223> Amplification primer containing a restriction endonuclease
site

<400> 374
gcgaagctta ctaaggcgag ggagtgcgcc gacgagggga gcggcctcg
49

<210> 375
<211> 52
<212> DNA
<213> Artificial Sequence

<220>
<223> Amplification primer containing a restriction endonuclease
site

<400> 375
gcgaagctta ctaacaaggc gagggagtgc gccgacgagg ggagcggcct cg
52

<210> 376
<211> 49
<212> DNA

<213> Artificial Sequence

<220>

<223> Amplification primer containing a restriction endonuclease site

<400> 376

gcgaagctta ctacggcgat tgagagcgtc gacggcgagg cgagggagt
49

<210> 377

<211> 52

<212> DNA

<213> Artificial Sequence

<220>

<223> Amplification primer containing a restriction endonuclease site

<400> 377

gcgaagctta ctaacacggc gattgagagc gtcgacggcg aggcgagggg gt
52

<210> 378

<211> 66

<212> DNA

<213> Artificial Sequence

<220>

<223> Amplification primer containing a restriction endonuclease site

<400> 378

gcgaagctta ctaacattga gattcccgag attgagatcg ccggcgacgc ggcgattgag
60

agcgtc

66

<210> 379

<211> 32

<212> DNA

<213> Artificial Sequence

<220>

<223> Amplification primer containing a restriction endonuclease site

<400> 379

gcgaagctta ctattgagat tcccgagatt ga
32

<210> 380

<211> 28

<212> DNA

<213> Artificial Sequence

<220>

<223> Amplification primer containing a restriction endonuclease site

<400> 380

ggaaagctta ctaacattga gattcccg
28

<210> 381
<211> 35
<212> PRT
<213> Hepatitis B virus

<400> 381

Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr Pro Ser Pro Arg
1 5 10 15

Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser Gln Ser Arg Glu
20 25 30

Ser Gln Cys
35

<210> 382
<211> 34
<212> PRT
<213> Hepatitis B virus

<400> 382

Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr Pro Ser Pro Arg
1 5 10 15

Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser Gln Ser Arg Glu
20 25 30

Ser Gln

<210> 383
<211> 24
<212> PRT
<213> Hepatitis B virus

<400> 383

Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr Pro Ser Pro Arg
1 5 10 15

Arg Arg Arg Ser Gln Ser Pro Cys
20

<210> 384
<211> 23
<212> PRT
<213> Hepatitis B virus

<400> 384

Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr Pro Ser Pro Arg
1 5 10 15

Arg Arg Arg Ser Gln Ser Pro
20

<210> 385
<211> 16
<212> PRT
<213> Hepatitis B virus

<400> 385

Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr Pro Ser Pro Cys
1 5 10 15

<210> 386
<211> 15
<212> PRT
<213> Hepatitis B virus

<400> 386

Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr Pro Ser Pro
1 5 10 15

<210> 387
<211> 9
<212> PRT
<213> Hepatitis B virus

<400> 387

Val Arg Arg Arg Gly Arg Ser Pro Cys
1 5

<210> 388
<211> 8
<212> PRT
<213> Hepatitis B virus

<400> 388

Val Arg Arg Arg Gly Arg Ser Pro
1 5

<210> 389
<211> 203
<212> PRT
<213> Hepatitis B virus

<400> 389

Met Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly
1 5 10 15

Cys Arg Cys Asn Asp Ser Ser Asp Pro Tyr Lys Glu Phe Gly Ala Thr
20 25 30

Val Glu Leu Leu Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg

35 40 45
 Asp Leu Leu Asp Thr Ala Ser Ala Leu Tyr Arg Glu Ala Leu Glu Ser
 50 55 60
 Pro Glu His Cys Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu
 65 70 75 80
 Cys Trp Gly Glu Leu Met Thr Leu Ala Thr Trp Val Gly Val Asn Leu
 85 90 95
 Glu Asp Pro Ala Ser Arg Asp Leu Val Val Ser Tyr Val Asn Thr Asn
 100 105 110
 Met Gly Leu Lys Phe Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu
 115 120 125
 Thr Phe Gly Arg Glu Thr Val Ile Glu Tyr Leu Val Ser Phe Gly Val
 130 135 140
 Trp Ile Arg Thr Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu
 145 150 155 160
 Ser Thr Leu Pro Glu Thr Thr Val Val Arg Arg Arg Gly Arg Ser Pro
 165 170 175
 Arg Arg Arg Thr Pro Ser Pro Arg Arg Arg Arg Ser Gln Ser Pro Arg
 180 185 190
 Arg Arg Arg Ser Gln Ser Arg Glu Ser Gln Cys
 195 200

 <210> 390
 <211> 176
 <212> PRT
 <213> Artificial sequence

 <220>
 <223> Influenza-Hepatitis B chimera

 <400> 390
 Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu
 1 5 10 15
 Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp
 20 25 30
 Thr Ala Ser Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys
 35 40 45
 Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu

50 55 60
 Leu Met Thr Leu Ala Thr Trp Val Gly Val Asn Leu Glu Asp Gly Ile
 65 70 75 80
 Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly Cys
 85 90 95
 Arg Cys Asn Asp Ser Ser Asp Glu Leu Pro Ala Ser Arg Asp Leu Val
 100 105 110
 Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys Phe Arg Gln Leu Leu
 115 120 125
 Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg Glu Thr Val Ile Glu
 130 135 140
 Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr Pro Pro Ala Tyr Arg
 145 150 155 160
 Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro Glu Thr Thr Val Val
 165 170 175

 <210> 391
 <211> 177
 <212> PRT
 <213> Artificial sequence

 <220>
 <223> Influenza-Heoatitis B mutant chimera

 <400> 391
 Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu
 1 5 10 15
 Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp
 20 25 30
 Thr Ala Ser Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys
 35 40 45
 Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu
 50 55 60
 Leu Met Thr Leu Ala Thr Trp Val Gly Val Asn Leu Glu Asp Gly Ile
 65 70 75 80
 Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly Ala
 85 90 95
 Arg Ala Asn Asp Ser Ser Asp Glu Leu Pro Ala Ser Arg Asp Leu Val

	100		105		110														
Val	Ser	Tyr	Val	Asn	Thr	Asn	Met	Gly	Leu	Lys	Phe	Arg	Gln	Leu	Leu				
		115					120					125							
Trp	Phe	His	Ile	Ser	Cys	Leu	Thr	Phe	Gly	Arg	Glu	Thr	Val	Ile	Glu				
	130					135					140								
Tyr	Leu	Val	Ser	Phe	Gly	Val	Trp	Ile	Arg	Thr	Pro	Pro	Ala	Tyr	Arg				
145					150					155					160				
Pro	Pro	Asn	Ala	Pro	Ile	Leu	Ser	Thr	Leu	Pro	Glu	Thr	Thr	Val	Val				
				165					170					175					

Cys

<210> 392
 <211> 183
 <212> PRT
 <213> Hepatitis B virus

<400> 392

Met	Gly	Ile	Ser	Leu	Leu	Thr	Glu	Val	Glu	Thr	Pro	Ile	Arg	Asn	Glu				
1				5					10					15					
Trp	Gly	Cys	Arg	Cys	Asn	Asp	Ser	Ser	Asp	Glu	Leu	Leu	Gly	Trp	Leu				
			20					25					30						
Trp	Gly	Ile	Asp	Ile	Asp	Pro	Tyr	Lys	Glu	Phe	Gly	Ala	Thr	Val	Glu				
		35					40					45							
Leu	Leu	Ser	Phe	Leu	Pro	Ser	Asp	Phe	Phe	Pro	Ser	Val	Arg	Asp	Leu				
	50					55					60								
Leu	Asp	Thr	Ala	Ser	Ala	Leu	Tyr	Arg	Glu	Ala	Leu	Glu	Ser	Pro	Glu				
65					70					75					80				
His	Cys	Ser	Pro	His	His	Thr	Ala	Leu	Arg	Gln	Ala	Ile	Leu	Cys	Trp				
				85					90					95					
Gly	Glu	Leu	Met	Thr	Leu	Ala	Thr	Trp	Val	Gly	Val	Asn	Leu	Glu	Asp				
			100					105					110						
Pro	Ala	Ser	Arg	Asp	Leu	Val	Val	Ser	Tyr	Val	Asn	Thr	Asn	Met	Gly				
		115					120					125							
Leu	Lys	Phe	Arg	Gln	Leu	Leu	Trp	Phe	His	Ile	Ser	Cys	Leu	Thr	Phe				
	130					135					140								

Gly Arg Glu Thr Val Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile
 145 150 155 160

Arg Thr Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr
 165 170 175

Leu Pro Glu Thr Thr Val Val
 180

<210> 393
 <211> 184
 <212> PRT
 <213> Hepatitis B virus
 <400> 393

Met Gly Ile Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu
 1 5 10 15

Trp Gly Cys Arg Cys Asn Asp Ser Ser Asp Glu Leu Leu Gly Trp Leu
 20 25 30

Trp Gly Ile Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu
 35 40 45

Leu Leu Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu
 50 55 60

Leu Asp Thr Ala Ser Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu
 65 70 75 80

His Cys Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp
 85 90 95

Gly Glu Leu Met Thr Leu Ala Thr Trp Val Gly Val Asn Leu Glu Asp
 100 105 110

Pro Ala Ser Arg Asp Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly
 115 120 125

Leu Lys Phe Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe
 130 135 140

Gly Arg Glu Thr Val Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile
 145 150 155 160

Arg Thr Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr
 165 170 175

Leu Pro Glu Thr Thr Val Val Cys
 180

<210> 394
<211> 18
<212> PRT
<213> Artificial Sequence

<220>
<223> Amplification primer containing a restriction endonuclease site.

<400> 394

Met Gly Ser Arg Cys Asn Asp Ser Ser Asp Ile Asp Pro Tyr Lys Glu
1 5 10 15

Phe Gly

<210> 395
<211> 59
<212> DNA
<213> Artificial Sequence

<220>
<223> Amplification primer containing a restriction endonuclease site.

<400> 395
ggcgccatgg ggtctagatg taacgattca agtgacatcg acccttataa agaatttcg
59

<210> 396
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> Amplification primer containing a restriction endonuclease site.

<400> 396

Met Gly Cys Asn Asp Ser Ser Asp Ile Asp Pro Tyr Lys Glu Phe Gly
1 5 10 15

<210> 397
<211> 52
<212> DNA
<213> Artificial Sequence

<220>
<223> Amplification primer containing a restriction endonuclease site.

<400> 397
gcgccatggg gtgtaacgat tcaagtgaca tcgaccctta taaagaattt gg
52

<210> 398
<211> 11
<212> PRT

<213> Artificial sequence

<220>

<223> Hbc precore alternative linker

<400> 398

Glu Leu Leu Gly Trp Leu Trp Gly Ile Asp Ile
1 5 10

<210> 399

<211> 14

<212> PRT

<213> Hepatitis B virus

<400> 399

Ser Lys Leu Cys Leu Gly Trp Leu Trp Gly Met Asp Ile Asp
1 5 10

<210> 400

<211> 38

<212> PRT

<213> Hepatitis B virus

<400> 400

Met Gly Ile Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu
1 5 10 15

Trp Gly Cys Arg Cys Asn Asp Ser Ser Asp Glu Leu Leu Gly Trp Leu
20 25 30

Trp Gly Ile Asp Ile Asp
35

<210> 401

<211> 24

<212> PRT

<213> Hepatitis B virus

<400> 401

Met Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly
1 5 10 15

Cys Arg Cys Asn Asp Ser Ser Asp
20

<210> 402

<211> 27

<212> PRT

<213> Hepatitis B virus

<400> 402

Met Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly
1 5 10 15

Cys Arg Cys Asn Asp Ser Ser Asp Glu Leu Asp
20 25

<210> 403
<211> 27
<212> PRT
<213> Hepatitis B virus

<400> 403

Met Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly
1 5 10 15

Ser Arg Ser Asn Asp Ser Ser Asp Glu Leu Asp
20 25

<210> 404
<211> 27
<212> PRT
<213> Artificial sequence

<220>
<223> Chimera of Hepatitis B virus and Influenza A virus

<400> 404

Met Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly
1 5 10 15

Ser Arg Cys Asn Asp Ser Ser Asp Glu Leu Asp
20 25

<210> 405
<211> 27
<212> PRT
<213> Artificial sequence

<220>
<223> Chimera of Hepatitis B and Influenza A viruses

<400> 405

Met Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly
1 5 10 15

Cys Arg Ser Asn Asp Ser Ser Asp Glu Leu Asp
20 25

<210> 406
<211> 52
<212> PRT
<213> Artificial sequence

<220>
<223> Chimera of Hepatitis B and Influenza A viruses

<400> 406

Met Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly
 1 5 10 15

Cys Arg Cys Asn Asp Ser Ser Asp Leu Glu Ser Leu Leu Thr Glu Val
 20 25 30

Glu Thr Pro Ile Arg Asn Glu Trp Gly Cys Arg Cys Asn Asp Ser Ser
 35 40 45

Asp Glu Leu Asp
 50

<210> 407
 <211> 52
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Chimera of Hepatitis B and Influenza A viruses

<400> 407

Met Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly
 1 5 10 15

Ser Arg Ser Asn Asp Ser Ser Asp Leu Glu Ser Leu Leu Thr Glu Val
 20 25 30

Glu Thr Pro Ile Arg Asn Glu Trp Gly Cys Arg Cys Asn Asp Ser Ser
 35 40 45

Asp Glu Leu Asp
 50

<210> 408
 <211> 77
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Chimera of Hepatitis B and Influenza A viruses

<400> 408

Met Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly
 1 5 10 15

Ser Arg Ser Asn Asp Ser Ser Asp Leu Gln Ser Leu Leu Thr Glu Val
 20 25 30

Glu Thr Pro Ile Arg Asn Glu Trp Gly Ser Arg Ser Asn Asp Ser Ser
 35 40 45

Asp Leu Glu Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu
 50 55 60

Trp Gly Cys Arg Cys Asn Asp Ser Ser Asp Glu Leu Asp
65 70 75

<210> 409
<211> 6
<212> PRT
<213> Influenza virus

<400> 409

Met Leu Glu Pro Phe Gln
1 5

<210> 410
<211> 6
<212> PRT
<213> Influenza virus

<400> 410

Met Leu Glu Pro Leu Gln
1 5

<210> 411
<211> 6
<212> PRT
<213> Artificial sequence

<220>
<223> primer protein sequence

<400> 411

Met Asp Ile Asp Pro Tyr
1 5

<210> 412
<211> 7
<212> PRT
<213> Artificial sequence

<400> 412

Val Val Thr Thr Glu Pro Leu
1 5

<210> 413
<211> 15
<212> PRT
<213> Artificial sequence

<220>
<223> primer protein sequence

<400> 413

Thr Glu Arg Gly Phe Thr Leu Ser Ser Ile His Phe Trp Leu Leu
1 5 10 15

<210> 414
<211> 7
<212> PRT
<213> Artificial sequence

<220>
<223> protein primer

<400> 414

Leu Thr Phe Gly Arg Glu Thr
1 5

<210> 415
<211> 13
<212> PRT
<213> Artificial sequence

<220>
<223> protein primer

<400> 415

Leu Ala Thr His His Pro Ser Ser His Glu Pro Ser Glu
1 5 10

<210> 416
<211> 7
<212> PRT
<213> Artificial sequence

<220>
<223> protein

<400> 416

Ala Leu Arg Gln Ala Ile Leu
1 5

<210> 417
<211> 7
<212> PRT
<213> Artificial sequence

<220>
<223> protein sequence

<400> 417

Cys Val Val Thr Thr Glu Pro
1 5

<210> 418
<211> 15
<212> PRT
<213> Artificial sequence

<220>
<223> protein

<400> 418

Arg Gly Phe Thr Leu Ser Ser Ile Cys Phe Trp Leu Leu Gln Arg
 1 5 10 15

<210> 419
 <211> 12
 <212> PRT
 <213> Artificial sequence

<220>
 <223> protein primer

<400> 419

Gly Met Asn Thr Asn Cys Tyr Ser Val Val Leu Asp
 1 5 10

<210> 420
 <211> 15
 <212> PRT
 <213> Artificial sequence

<220>
 <223> protein primer

<400> 420

Glu Gly Trp Cys Leu Ile Ala Gln Arg Cys Ala Thr His His Pro
 1 5 10 15

<210> 421
 <211> 9
 <212> PRT
 <213> Artificial sequence

<220>
 <223> protein primer

<400> 421

Trp Gly Glu Leu Met Thr Leu Ala Thr
 1 5

<210> 422
 <211> 13
 <212> PRT
 <213> Artificial sequence

<220>
 <223> protein primer

<400> 422

Glu Gly Trp Cys Leu Ile Cys Gln Arg Leu Ala Thr His
 1 5 10

<210> 423
 <211> 6
 <212> PRT
 <213> Artificial sequence

<220>
<223> protein primer

<400> 423

Leu Gly Met Asn Thr Asn
1 5

<210> 424
<211> 13
<212> PRT
<213> Artificial sequence

<220>
<223> protein primer

<400> 424

Gly Leu Lys Phe Arg Gln Cys Leu Trp Phe His Ile Ser
1 5 10

<210> 425
<211> 9
<212> PRT
<213> Artificial sequence

<220>
<223> protein primer

<400> 425

Trp Thr Cys Leu Thr Met Leu Glu Gly
1 5

<210> 426
<211> 6
<212> PRT
<213> Artificial sequence

<220>
<223> primer protein sequence

<400> 426

Ala Thr Trp Val Gly Val
1 5

<210> 427
<211> 6
<212> PRT
<213> Artificial sequence

<220>
<223> primer protein sequence

<400> 427

Met Gly Leu Lys Phe Arg
1 5

<210> 428

<211> 15
<212> PRT
<213> Artificial sequence

<220>
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<400> 428

Glu Gly Cys Cys Leu Ile Ala Gln Arg Leu Ala Thr His His Pro
1 5 10 15

<210> 429
<211> 14
<212> PRT
<213> Artificial sequence

<220>
<223> protein primer sequence

<400> 429

Gly Leu Lys Cys Arg Gln Leu Leu Trp Phe Ser Ala Pro Asp
1 5 10

<210> 430
<211> 10
<212> PRT
<213> Artificial sequence

<220>
<223> protein primer sequence

<400> 430

Ser Ala Pro Asp Asp Glu Cys Asn Val Gly
1 5 10

<210> 431
<211> 8
<212> PRT
<213> Artificial sequence

<220>
<223> protein primer sequence

<400> 431

Ala Ser Cys Asp Leu Val Val Ser
1 5

<210> 432
<211> 9
<212> PRT
<213> Artificial sequence

<220>
<223> protein primer sequence

<400> 432

Ile Gly Asp Glu Leu Asn Val Gly Val

1 5

<210> 433
<211> 9
<212> PRT
<213> Artificial sequence

<220>
<223> protein primer sequence

<400> 433

Ile Gly Asp Glu Cys Asn Val Gly Val
1 5

<210> 434
<211> 12
<212> PRT
<213> Artificial sequence

<220>
<223> protein primer sequence

<400> 434

Gly Ile Gln Lys Glu Leu Pro Ala Ser Arg Asp Leu
1 5 10

<210> 435
<211> 12
<212> PRT
<213> Artificial sequence

<220>
<223> protein primer sequence

<400> 435

Gly Ile Gln Lys Glu Leu Pro Ala Ser Cys Asp Leu
1 5 10

<210> 436
<211> 36
<212> PRT
<213> Artificial sequence

<220>
<223> primer protein sequence

<400> 436

Ile Leu Asp Ala Glu Phe Arg His Asp Ser Gly Tyr Glu Val His His
1 5 10 15

Gln Lys Leu Val Phe Phe Ala Glu Asp Val Gly Ser Asn Lys Gly Ala
20 25 30

Ile Ile Glu Leu
35

<210> 437
<211> 24
<212> PRT
<213> Artificial sequence

<220>
<223> primer protein sequence

<400> 437

Ile Val Thr Lys Glu Asn Thr Ile Ile Asn Pro Ser Glu Asn Gly Asp
1 5 10 15

Thr Ser Thr Asn Gly Ile Glu Leu
20

<210> 438
<211> 15
<212> PRT
<213> Artificial sequence

<220>
<223> protein primer sequence

<400> 438

Ile Val Tyr Gln His Ser His Gly Glu Asp Arg Pro Gly Glu Leu
1 5 10 15

<210> 439
<211> 26
<212> PRT
<213> Artificial sequence

<220>
<223> protein primer sequence

<400> 439

Ile Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly
1 5 10 15

Ser Arg Ser Asn Asp Ser Ser Asp Glu Leu
20 25

<210> 440
<211> 43
<212> DNA
<213> Artificial sequence

<220>
<223> primer

<400> 440
ccatggacat cgacccttat cgcaatttgg agctactgtg gag
43

<210> 441
<211> 44

<212> DNA
 <213> Artificial sequence

 <220>
 <223> primer

 <400> 441
 ctccacagta gctccaaatt cgcgataagg gtogatgtcc atgg
 44

 <210> 442
 <211> 37
 <212> DNA
 <213> Artificial sequence

 <220>
 <223> primer

 <400> 442
 cactaatatg ggcctaaggt tcaggcaact cttgtgg
 37

 <210> 443
 <211> 37
 <212> DNA
 <213> Artificial sequence

 <220>
 <223> primer

 <400> 443
 ccacaagagt tgcctgaacc ttaggcccat attagtg
 37

 <210> 444
 <211> 41
 <212> DNA
 <213> Artificial sequence

 <220>
 <223> primer

 <400> 444
 gccttagagt ctcctgagca ttgttcacct caccatactg c
 41

 <210> 445
 <211> 41
 <212> DNA
 <213> Artificial sequence

 <220>
 <223> primer

 <400> 445
 gcagtatggt gaggtgaaga atgctcagga gactctaagg c
 41

 <210> 446
 <211> 44
 <212> DNA

<213> Artificial sequence

<220>

<223> primer

<400> 446

ggcaactctt gtggtttcac atttcttgtc tcattttgga agag
44

<210> 447

<211> 45

<212> DNA

<213> Artificial sequence

<220>

<223> primer

<400> 447

ctctttccaaa agtgagagaa gaaatgtgaa accacaagag ttgcc
45

<210> 448

<211> 42

<212> DNA

<213> Artificial sequence

<220>

<223> primer

<400> 448

cctgggtggg tgtaatttg aaagaagatc cagcgtctag ag
42

<210> 449

<211> 42

<212> DNA

<213> Artificial sequence

<220>

<223> primer

<400> 449

ctctagacgc tggatcttct ttcaaattaa caccaccca gg
42

<210> 450

<211> 24

<212> PRT

<213> Artificial sequence

<220>

<223> peptide conjugate sequence

<400> 450

Met Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly
1 5 10 15

Cys Arg Cys Asn Asp Ser Ser Asp
20

<210> 451
 <211> 20
 <212> PRT
 <213> Yersinia pestis

<400> 451

Gly Asp Ile Pro Tyr Leu Gly Ala Leu Phe Arg Arg Lys Ser Glu Leu
 1 5 10 15

Thr Arg Arg Thr
 20

<210> 452
 <211> 24
 <212> PRT
 <213> Influenza

<400> 452

Met Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly
 1 5 10 15

Cys Arg Cys Asn Asp Ser Ser Asp
 20

<210> 453
 <211> 23
 <212> PRT
 <213> Influenza

<400> 453

Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly Cys
 1 5 10 15

Arg Cys Asn Asp Ser Ser Asp
 20

<210> 454
 <211> 24
 <212> PRT
 <213> Influenza

<400> 454

Met Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly
 1 5 10 15

Cys Arg Cys Asn Asp Ser Ser Asp
 20

<210> 455
 <211> 23
 <212> PRT
 <213> Inlfuenza

<400> 455

Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly Cys
1 5 10 15

Arg Cys Asn Asp Ser Ser Asp
20